APPENDIX A

United States Court of Appeals,
Federal Circuit.

RHONE-POULENC AGRO, S.A. (Now known as Aventis CropScience, SA), Plaintiff-Appellee,
v.
DeKALB GENETICS CORPORATION, Defendant-Appellant,
and
Monsanto Company, (Now known as Pharmacia Corporation), Defendant.

Nos. 00-1218, -1350.
Nov. 19, 2001.
Rehearing and Rehearing En Banc Denied March 26, 2002.

[272 F.3d 1335, 60 U.S.P.Q.2d 1769]

Before CLEVENGER, SCHALL and DYK, Circuit Judges.

CLEVENGER, Circuit Judge.

This case concerns a claim by Rhône-Poulenc Agro, S.A. ("RPA") that it was fraudulently induced to enter into a 1994 Agreement with DeKalb Genetics Corporation ("DeKalb"), as well as RPA's related claims of trade secret and patent infringement against DeKalb. Trial was bifurcated between two different juries, with the first jury deciding the licensing and technology transfer issues and the second jury deciding the trade secret and patent infringement claims.

The first jury trial resulted in a judgment in favor of RPA that DeKalb fraudulently induced RPA to enter

into the 1994 Agreement. RPA was awarded $1 in nominal damages, $15 million in unjust enrichment recovery, and $50 million in punitive damages. RPA also was awarded rescission of the 1994 Agreement. The second jury trial similarly resulted in a judgment in favor of RPA with regard to both the trade secret misappropriation and patent infringement claims. RPA and DeKalb entered into a stipulated agreement regarding damages for trade secret misappropriation and patent infringement.

DeKalb appeals the fraudulent inducement, trade secret misappropriation, and patent infringement verdicts, as well as the award of punitive damages and several related post-trial rulings by the district court.

For the reasons set forth below, we affirm.

I
Background

This litigation arises from disputes relating to several different technology transfers and licenses between RPA and DeKalb. The technology underlying these agreements involves the research and development of genetically engineered corn that is tolerant to glyphosate herbicides, thereby permitting a farmer to thoroughly douse a field with herbicide to kill weeds, while allowing the resistant corn to survive. Eventually, the successful glyphosate- resistant corn technology resulted in DeKalb's "Roundup Ready®" corn, introduced to market in 1998.

The events leading to the development of Roundup Ready® corn spanned a period of over ten years. In 1985, DeKalb and Calgene, Inc., entered into an agreement [1341] for the joint development of crops containing Calgene's C-aroA, or CT 7 gene. The C-aroA gene is covered by a set of Calgene patents referred to as the "Comai" patents, U.S. Patents Nos. 4,535,060 and 4,769,061. The C-aroA gene is an "EPSPS" gene derived from a *Salmonella* bacterium. Inside a plant, the herbicide glyphosate binds to a specific enzyme

in a plant chloroplast, called EPSPS (5-enolpyruvyl-3-phosphoshikimate synthase enzyme), which then cannot perform its normal critical function in the biosynthesis of aromatic acids, and the plant dies. When the C-aroA gene is expressed[1] in transgenic plants, the bacterial EPSPS enzyme encoded by this gene fulfills the aromatic amino acid needs of the plant in the presence of glyphosate, whereas the plant version of this enzyme (ubiquitous in nature) is sensitive to glyphosate.

The 1985 DeKalb-Calgene Agreement gave DeKalb an exclusive license to the Comai patents in the field of use of corn. It also provided for various royalty payments to be made by DeKalb to Calgene for products developed under the agreement. In 1991, RPA, DeKalb, and Calgene entered into an "Assignment and Assumption Agreement" whereby RPA assumed Calgene's rights and obligations under the 1985 Agreement. The combination of both the 1985 Agreement and the 1991 Agreement is referred to herein as the "1985/1991 Agreement."

> Beyond the 1985/1991 Agreement, DeKalb and RPA were involved in a broader collaboration to produce glyphosate-tolerant corn. RPA performed the initial genetic work by creating various genetic constructs. DeKalb "transformed" corn cells by placing the RPA constructs into corn cells, grew full corn plants from the cells in a greenhouse, and finally, performed field tests on corn plants grown from seeds of the greenhouse plants. Neither company appeared to have the technical expertise to perform each other's work.

The events leading up to this lawsuit commenced in 1992. At a November 1992 meeting, Dr. Freyssinet of RPA told Dr. Mackey of DeKalb that RPA would provide DeKalb

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[1] Gene expression is the process by which a gene's coded information is converted into the structures present and operating in the cell.

with new genetic material containing a mutated EPSPS gene from maize (corn), as opposed to the bacterial C-aroA gene. In return, Dr. Mackey agreed that DeKalb would provide RPA with the results of its testing. Dr. Freyssinet then asked Dr. DeRose, another RPA scientist, to prepare some constructs of the mutated corn gene for DeKalb. Dr. DeRose combined an optimized transit peptide ("OTP") with a maize EPSPS gene that had been mutated at two different locations in the amino acid sequence (the double mutant maize EPSPS gene, or "DMMG").[2]

This new construct, consisting of the OTP and the DMMG, is the subject of RPA's trade secret misappropriation claim, and is designated "RD-125." The OTP is covered by claim 11 of U.S. Patent No. 5,510,471, reissued as RE 36,449 on Dec. 14, 1999 ("the '471 patent"), and is the subject of RPA's patent infringement claim. Dr. DeRose of RPA transferred the RD-125 construct to DeKalb in February 1993.

In late 1993 and early 1994, DeKalb succeeded in growing herbicide resistant corn plants in its greenhouse. On February [1342] 18, 1994, DeKalb notified RPA of these results, and told RPA that DeKalb would begin repeating the experiments in the field in the summer of 1994. Dr. Freyssinet of RPA briefly thanked DeKalb for this information. On March 10, 1994, DeKalb sent RPA another letter again mentioning the summer field trials and the gains in herbicide tolerance achieved in the greenhouse with RD 125. The letter also requested RPA's opinion regarding the use of RD-125 for other projects.

DeKalb conducted field tests in Hawaii in the summer of 1994, and on September 6, 1994, DeKalb scientists, includ-

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[2] A peptide is two or more amino acids joined by a peptide bond, and a transit peptide is a coding sequence involved in importing a protein into a subcellular compartment, in this case delivering the EPSPS protein to the chloroplasts of the corn plants.

ing Dr. Flick of DeKalb, received results from the tests indicating that the corn plants grown in the field were resistant to up to four times the normal levels of Roundup® herbicide (results similar to the greenhouse tests). These were very encouraging results. However, DeKalb never sent the results of the field tests to RPA. Instead, on September 7, 1994, Dr. Flick sent only a short letter to RPA inquiring about using RD-125 as a selective marker in soybeans.

Following the field tests, DeKalb immediately began backcrossing the successful corn plants containing RD-125 with commercial corn varieties, also referred to as DeKalb's elite corn lines. For a trait such as glyphosate tolerance to become incorporated into a species' genome, recurrent backcrossing of plants of that species by hybrid intermediaries, and survival and fertility of the resulting offspring, is necessary. Commercial corn varieties with and without the trait of interest are then compared to ensure that the trait does provide resistance to glyphosate herbicide, but does not negatively impact other agronomic traits. Backcrossing of plants in order to prepare for the creation of a marketable line of seeds can take several years. Thus, immediately beginning the backcrossing process gave DeKalb a jump on any potential competition.

Also during the summer of 1994, Calgene and RPA filed a patent infringement suit against Monsanto over Monsanto's alleged use of the Comai patents' technology in making, using and selling glyphosate-resistant soybeans. DeKalb also had an interest in this litigation, because DeKalb was the exclusive licensee of the Comai patents in the field of corn.

Pursuant to the Monsanto litigation, two agreements were negotiated in December 1994. First, Calgene, RPA and Monsanto agreed to a settlement of the patent litigation over the Comai patents. Monsanto paid $8 million in return for a co-exclusive license to the Comai patents, shared in part with DeKalb, for use in all fields. Second, RPA and DeKalb entered into a new agreement (the "1994 Agreement"), which

dissolved the 1985/1991 Agreements. DeKalb agreed to share its exclusive license for corn under the Comai patents with Monsanto, and received $500,000 of the settlement proceeds. RPA also granted DeKalb the "world-wide, paid-up right to use" various technologies in the field of corn, explicitly including RD-125 in the list of technologies covered. The 1994 Agreement also gave DeKalb the right to grant sublicenses to the aforementioned technologies, and thus amounted to a complete surrender of RPA's exclusive rights in the technologies.

Eventually, DeKalb developed a successful glyphosate-tolerant corn line containing RD-125, marketed as Roundup Ready® corn, which DeKalb referred to as the "GA21 corn line." In January 1996, DeKalb and Monsanto entered into an agreement to work together on the corn, and DeKalb licensed the GA21 corn line to Monsanto. "Roundup®" is a glyphosate herbicide manufactured by Monsanto. [1343] Sales of Roundup Ready® corn seeds began in 1998.

RPA sued DeKalb, claiming that by not providing RPA with the results of the 1994 Hawaii field tests, DeKalb fraudulently induced RPA to enter into the 1994 Agreement, which gave DeKalb paid-up rights to the RD-125 technology. RPA also sued DeKalb for misappropriation of trade secrets, alleging that the RD- 125 technology constituted an RPA trade secret. RPA additionally sued for patent infringement of the '471 patent, originally asserting several different claims, although the only claim still at issue is claim 11. The '471 patent covers the OTP which is part of the RD-125 technology.

Granting a motion by DeKalb, the district court bifurcated the case into two different jury trials. The first trial covered all of the fraud and licensing issues. The trade secret and patent issues were delayed until a second jury trial, since it was agreed that if RPA did not win at least partly in the first jury trial, the trade secret and patent issues would become moot.

In the first trial, the jury found that RPA agreed to allow DeKalb to use the RD-125 construct in return for DeKalb's agreement to provide test results to RPA. The jury found that DeKalb breached this agreement by not revealing the Hawaii field tests. The jury also found that DeKalb fraudulently induced RPA to enter the 1994 Agreement, and that this caused RPA to enter the 1994 Agreement on a different basis than it otherwise would have. The district court determined that rescission of the 1994 Agreement was appropriate. The jury awarded RPA $15 million for DeKalb's unjust enrichment, $1 in nominal damages, and $50 million in punitive damages.

Prior to the second jury trial, DeKalb conceded that it did not retain any defense of noninfringement as to claim 11 of the '471 patent. However, DeKalb asserted affirmative defenses of obviousness pursuant to 35 U.S.C. § 103, as well as inequitable conduct by RPA during the procurement of the '471 patent. DeKalb also wanted to introduce evidence in the second jury trial that it had been granted a license to the technology at issue from RPA, but the district court ruled that all licensing issues had already been resolved against DeKalb in the first trial. DeKalb was therefore prevented from asserting a licensing defense to either the trade secret misappropriation or patent infringement claims.

In the second trial, the jury first determined that RD-125 was a trade secret from April 1996 until February 1997, and that DeKalb misappropriated it. Second, the jury determined that claim 11 of the '471 patent was not obvious. Third, the jury, serving in an advisory capacity regarding the inequitable conduct issue, found that a declaration submitted by RPA to the U.S. Patent and Trademark Office was not fraudulent, and the district court agreed in its ruling on the issue. Therefore DeKalb was also liable for patent infringement. Fourth, the jury declined to grant punitive damages against DeKalb on the trade secret misappropriation claim. RPA and DeKalb entered into a stipulated agreement regarding damages for trade secret misappropriation and patent infringement.

This appeal followed.

II
Fraudulent Inducement

DeKalb argues that the jury verdict finding that it fraudulently induced RPA to enter into the 1994 Agreement is not supported by substantial evidence. The district court denied DeKalb's motion for judgment as a matter of law ("JMOL") [1344] overturning the finding of fraudulent inducement, thereby ruling that there was a legally sufficient evidentiary basis for a reasonable juror to reach this conclusion. *Rhône-Poulenc Agro S.A.* v. *Monsanto Company and DeKalb Genetics Corp.*, No. 1:97CV1138 (M.D.N.C. Feb. 8, 2000). Upon review, this court reapplies the same standard of review. *Tec Air, Inc.* v. *Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1357, 52 USPQ2d 1294, 1296 (Fed.Cir.1999). Thus, we review whether or not there was a legally sufficient evidentiary basis for the jury to find that DeKalb fraudulently induced RPA to enter into the 1994 Agreement in which RPA gave DeKalb paid-up rights to use and sublicense the RD-125 technology.

The fraud claim was tried in the district court pursuant to North Carolina state law. *Rhône-Poulenc Agro S.A.*, slip op. at 16 n. 13. We review issues not unique to patent law under the law that would be applied in the regional circuit where appeals from the district court would normally lie. *Tronzo* v. *Biomet, Inc.*, 236 F.3d 1342, 1346, 57 U.S.P.Q.2d 1385, 1388 (Fed.Cir.2001). In this case, the Fourth Circuit would apply North Carolina state law, and we thus will do likewise.

North Carolina requires that, for the remedy of rescission, each element of fraud must be proven by a preponderance of the evidence. *Maynard* v. *Durham & Southern Ry. Co.*, 251 N.C. 783, 112 S.E.2d 249, 251 (1960), *rev'd on other grounds*, 365 U.S. 160, 81 S.Ct. 561, 5 L.Ed.2d 486 (1961) (*citing Walters* v. *Bridgers*, 251 N.C. 289, 111 S.E.2d 176, 180 (1959)). This is a lower standard than the more

typical "clear and convincing evidence." The elements of actual fraud under North Carolina law are:

> (1) material misrepresentation of a past or existing fact; (2) the representation must be definite and specific; (3) made with knowledge of its falsity or in culpable ignorance of its truth; (4) that the misrepresentation was made with intention that it should be acted upon; (5) that the recipient of the misrepresentation reasonably relied upon it and acted upon it; and (6) that there resulted in damage to the injured party.

Hudson-Cole Development v. *Beemer*, 132 N.C.App. 341, 511 S.E.2d 309, 313 (1999) (*citing Rosenthal* v. *Perkins*, 42 N.C.App. 449, 257 S.E.2d 63, 65 (1979)). The district court's opinion combined the first and second elements into a single test for whether a false representation or concealment of material fact was made. *Rhône-Poulenc Agro S.A.*, slip op. at 16. Thus, the district court's opinion refers to only five different elements for proving fraud. However, since DeKalb does not contest either the first or second elements of the district court's opinion, this difference is immaterial.

DeKalb argues that three of the elements of fraud were not supported by substantial evidence at the trial. First, DeKalb argues that no evidence was presented that demonstrated that a representation was made with knowledge of its falsity or in culpable ignorance of its truth, *i.e.*, that DeKalb reasonably calculated to deceive RPA. Second, DeKalb argues that RPA's evidence of DeKalb's intent to deceive RPA was insufficient. Third, DeKalb alleges that any reliance by RPA was unreasonable.

North Carolina law allows the same evidence to be used as proof of the "reasonably calculated to deceive" and "intent to deceive" prongs of the fraud test. *New Bern Pool & Supply Co.* v. *Graubart*, 94 N.C.App. 619, 381 S.E.2d 156, 161 (1989), *aff'd*, 326 N.C. 480, 390 S.E.2d 137 (1990) ("The reasonable inference could be drawn that these repre-

sentations and concealments were reasonably calculated to deceive, [1345] were made with intent to deceive, and that plaintiff was in fact deceived."). Because the arguments and evidence relating to these two elements of the fraud test are similar, we will address them together.

> The heart of RPA's case for fraud concerns DeKalb's behavior upon learning of the successful Hawaii field test results for corn containing the RD-125 technology. The jury found that at a meeting between RPA and DeKalb in November 1992, RPA promised to give DeKalb certain genetic constructs, and DeKalb promised to keep RPA informed of test results. After RPA provided DeKalb with the RD-125 construct in 1993, DeKalb proceeded to insert the construct into corn plants and performed greenhouse tests on the ability of the modified corn plants to withstand glyphosate herbicide. Dr. DeRose from RPA made periodic contact with various scientists from DeKalb, including Dr. Flick, throughout 1993. Dr. DeRose additionally made a site visit to DeKalb to view corn growing in its greenhouse in Connecticut.

On February 18, 1994, Dr. Flick of DeKalb sent a progress report to Drs. Freyssinet and DeRose at RPA, detailing the results of the greenhouse testing to date. The letter was quite positive, stating:

> This has been a very exciting period in this work ... we have now demonstrated tolerance in transgenic plants in the greenhouse to up to four times the field application recommended by Monsanto for tolerant corn! We will repeat these experiments in the field in the summer of 1994. It is obvious from these results that the mutant maize gene [part of the RD-125 construct] has been the key to success.

However, greenhouse testing was only one of the first steps required in demonstrating commercial viability of the

glyphosate-tolerant corn. Field tests were necessary in order to demonstrate that the resistant gene would be passed on to the next generation through the seed stage of the plant. Dr. DeRose testified that no successful field trials of glyphosate-resistant corn had ever been done at that point in time, and that due to the number of past failures, he had no specific expectation that the planned field trials would succeed.

On September 6, 1994, Dr. Flick of DeKalb learned that the Hawaii field tests had been successful. However, Dr. Flick did not communicate this information to anyone at RPA. Instead, on September 7, 1994, Dr. Flick wrote Dr. Freyssinet of RPA the following letter, stating in its entirety:

> As the results that we have obtained in maize with the glyphosate resistant double mutant maize gene provided by RPA to DEKALB have been very encouraging, we are interested in whether this gene would also function as a selectable marker in soybeans. Is it possible for DEKALB to use this gene in soybeans as a selectable marker?
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> I will await your answer.

In fact, DeKalb never informed RPA about the success of the Hawaii field test results. When Dr. Flick was asked in deposition why he did not inform anyone at RPA about the Hawaii field test results, he responded that it would have required him to write a longer letter. Dr. Flick was evidently not a compelling witness for DeKalb. In fact, the district court's opinion notes that Dr. Flick's manner during his video deposition "most reasonably could have been interpreted as indicative of deception."[3] *Rhône-Poulenc Agro S.A.*, slip op. at 26.

[1346] Additionally, DeKalb's lawyer Doug Fisher was also aware of the Hawaii field test results. Mr. Fisher and Dr. Flick were involved in preparing the appendix to the

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[3] Dr. Flick was not called as a witness at trial, and testified only via his video deposition.

1994 Agreement between RPA and DeKalb which transferred the RD-125 construct to DeKalb under a paid-up license. Furthermore, RPA put forth evidence tending to show that Mr. Fisher's notes relating to the preparation of the 1994 Agreement were destroyed by DeKalb in contravention of DeKalb's stated document retention policy.

DeKalb argues that no evidence shows that it failed to send the Hawaii test results under a "plan" to cause RPA to enter the 1994 Agreement. DeKalb further asserts that Dr. Flick's September letter cannot support a finding of deceitful intent. Certainly, it is true that RPA has not introduced a "smoking gun" memo clearly delineating a fraudulent scheme or plan by DeKalb. However, DeKalb's arguments appear to urge that inferences cannot be drawn from the actions that took place at DeKalb.

When reviewing a motion for JMOL, we review the evidence and draw inferences in the light most favorable to the verdict winner. McGinley v. Franklin Sports, Inc., 262 F.3d 1339 (Fed.Cir.2001). We do not assess the credibility of witnesses, as that is the jury's province. *Comark Communs.* v. *Harris Corp.*, 156 F.3d 1182, 1192-93, 48 USPQ2d 1001 (Fed.Cir.1998). The evidence produced at trial tended to show that the Hawaii field test results were an important and exciting milestone in the development of glyphosate- tolerant corn. In light of this, it seems odd that Dr. Flick neglected to send these results to anyone at RPA, especially in light of his past actions forwarding on the initial field test results and generally keeping RPA informed of research events. Dr. Flick's explanation for his actions was certainly less than convincing. When this evidence is coupled with the testimony regarding the knowledge and actions of DeKalb's lawyer who assisted in procuring a paid-up license to RD-125 for DeKalb, it seems reasonable to infer that DeKalb reasonably calculated and intended to deceive RPA by withholding the Hawaii field test results to gain a strategic advantage in the 1994 Agreement.

DeKalb also argues that there was no substantial evidence that RPA's reliance on DeKalb's alleged fraudulent conduct was reasonable. The RD-125 construct, as well as the OTP and the DMMG sequences, were all clearly included in the exhibit attached to the 1994 Agreement that listed the genetic material subject to the agreement. DeKalb argues that RPA should have inquired about the results of the Hawaii field tests and the potential of the RD-125 construct before signing away exclusive rights to the technology, and that RPA's failure to do so was unreasonable.

Certainly, RPA could have done more to police their own technology. However, RPA did present testimony that the success of the Hawaii field tests was unexpected, because no one had ever achieved success in the field with glyphosate-tolerant corn before. Furthermore, Dr. DeRose testified that he had a close and friendly relationship with the scientists at DeKalb and "they always sent us this information without asking them when things had worked, so I fully expected to receive information when these experiments were working." The close working relationship between various RPA and DeKalb scientists, as well as their shared past history of prior failure to achieve success in the field, made it reasonable for RPA to assume that silence from DeKalb meant failure. The jury was properly instructed as to the elements of fraud and found reasonable reliance, and "in fraud actions 'it is generally for the jury to decide [1347] whether plaintiff reasonably relied upon representations made by defendant.'" *Rowan County Bd. Of Educ.* v. *United States Gypsum Co.*, 103 N.C.App. 288, 407 S.E.2d 860, 863 (N.C.Ct.App.1991), *aff'd in relevant part*, 332 N.C. 1, 418 S.E.2d 648 (1992). We therefore hold that the jury's fraud verdict was supported by substantial evidence.

III
Punitive Damage Award

After finding DeKalb liable for fraudulent inducement of the 1994 Agreement, the jury returned a damages verdict

awarding RPA $15 million in unjust enrichment, $1 in nominal damages, and $50 million in punitive damages. The district court affirmed the punitive damages award. *Rhône-Poulenc Agro, S.A.*, slip op. at 123-28. On appeal, DeKalb contests the punitive damages award as unconstitutionally excessive.

Pursuant to the recent Supreme Court decision *Cooper Indus., Inc.* v. *Leatherman Tool Group, Inc.*, 532 U.S. 424, 121 S.Ct. 1678, 149 L.Ed.2d 674, 58 USPQ2d 1641 (2001), we review the constitutionality of an award of punitive damages under a *de novo* standard of review. Punitive damages are intended to both punish the defendant for wrongful conduct, and deter future wrongdoing. The Supreme Court in Cooper cautioned that "[d]espite the broad discretion that States possess with respect to the imposition of criminal penalties and punitive damages, the Due Process Clause of the Fourteenth Amendment to the Federal Constitution imposes substantive limits on that discretion." *Id.* at 1684.

The Supreme Court in *Cooper* reviewed several of its past decisions involving punitive damages and noted that "in each of these cases we have engaged in an independent examination of the relevant criteria." *Id.* at 1685. Independent examination or review means a searching review, one that hunts for error and gives virtually no weight to the decisional process under review. Each aspect of the appellate review puts each aspect of the decision under review in sharp focus. Although our standard of review is de novo, the Supreme Court's decision in *Cooper* cautions us that the decision does not suggest "that the Seventh Amendment would permit a court, in reviewing a punitive damages award, to disregard ... jury findings" on factual issues. *Cooper*, 532 U.S. 424, 121 S.Ct. at 1687, 149 L.Ed.2d 674. We understand this to mean that if a punitive damages determination rests on purely factual issues, we are to assume that those factual issues have been resolved adversely to the defendant, absent contrary indication.

We examine the process followed in *Cooper* to provide guidance on how to approach this searching review. The three main criteria cited by the Court correspond to the three factors from *BMW of N. Am., Inc.* v. *Gore*, 517 U.S. 559, 116 S.Ct. 1589, 134 L.Ed.2d 809 (1996):

> (1) the degree or reprehensibility of the defendant's misconduct,
>
> (2) the disparity between the harm (or potential harm) suffered by the plaintiff and the punitive damages award [the ratio test], and
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> (3) the difference between the punitive damages awarded by the jury and the civil penalties authorized or imposed in comparable cases.

Cooper, 532 U.S. 424, 121 S.Ct. at 1687-88, 149 L.Ed.2d 674, *citing Gore*, 517 U.S. at 574-75, 116 S.Ct. 1589. Thus, the Cooper opinion confirms that the *Gore* factors continue to provide a blueprint regarding what to examine with regard to punitive damages.

However, the *Cooper* opinion provides additional guidance beyond a mere recitation [1348] of the *Gore*http://www.westlaw.com/Find/Default.wl?rs=dfa1.0&vr=2.0&FindType=Y&SerialNum=1996118412 factors. For instance, the Supreme Court in *Cooper* looked to see if there was any procedural error lurking in the manner in which the punitive damages request was put to the jury. *See Cooper*, 532 U.S. 424, 121 S.Ct. at 1688, 149 L.Ed.2d 674 (noting that a flaw in the jury charge, namely the statement that the copying in the case was unlawful when in fact it was not, could have influenced the reprehensibility determination by the jury). A similar example of procedural error might include whether the jury charge was potentially misleading, as opposed to actually inaccurate.

The first *Gore* factor, reprehensibility of the misconduct, merits further discussion. Since punitive damages are in essence a punishment assigned to a wrongdoer by civilians, the degree of reprehensibility of the wrongdoer is of utmost im-

portance in deciding whether the award of punitive damages is unconstitutionally excessive. The reprehensibility judgment thus deserves extremely careful examination. The Court in *Cooper* however, noted that this factor can be influenced by the demeanor and credibility of witnesses, matters on which any appellate court must defer substantially to the jury. *Cooper*, 532 U.S. 424, 121 S.Ct. at 1687-88, 149 L.Ed.2d 674. It thus appears that the reprehensibility factor presents a mixed issue for appellate review: to the extent that the judgment-call on reprehensibility can be traced to a jury's assessment of witnesses, independent appellate review is essentially meaningless. But with respect to any other aspect of the reprehensibility judgment, appellate review must be searching and close.

The Court in *Cooper* also considered the factual accuracy of the evidence put to the jury. *See Cooper*, 121 S.Ct. at 1688-89 (noting that the estimate of the possible harm to the plaintiff, measured by the likely success of the defendant, may have been infected by an inaccurate assessment of the extent of likely gain to the defendant). In *Cooper*, this subject fed into the second *Gore* factor, the calculation of the ratio between the size of the punitive damages award and the harm caused by the defendant's tortious conduct.

Third, the Court in *Cooper* noted that the third *Gore* factor, the comparison with comparable sanctions, was particularly well suited to appellate review because it called for a broad legal comparison. *Id.* at 1688. Indeed, upon review of the third factor, the Court in *Cooper* considered a dispute regarding this factor over which the Court of Appeals had expressed no opinion. *See id.* at 1689 (noting that a searching, independent review of comparable state law sanctions might reveal questions as to whether the facts of the case would lead to multiple state law sanctions, instead of a single sanction).

The Court in *Cooper* candidly recognized that the end result of appellate review might not differ if independent re-

view was not required. Independent review, however, is designed to assure that no aspect of the assessment of punitive damages can escape examination under the judicial microscope. In *Cooper* itself, the Court discerned three aspects in which independent review required the appellate court to decide for itself if the circumstances of the case warranted the punitive damage award. In the light of *Cooper*, we think it reasonable to structure our independent review on each of the pertinent factors to include at least three tests, each applied without deference: examination of whether the punitive damages subject was properly submitted to the jury, examination of the factual predicates for any of the pertinent factors, and careful assessment of any comparable state law sanctions.

We first examine the factor denoted "perhaps the most important indicium of [1349] the reasonableness of a punitive damages award" the degree of reprehensibility of the defendant's conduct. *Gore*, 517 U.S. at 575, 116 S.Ct. 1589. Following *Cooper*, we initially check to ensure that the punitive damage issue was properly submitted to the jury. The jury instructions clearly spelled out the criteria that the jury should consider in reaching its decision, and the district court noted that these criteria were similar to criteria cited with approval in *Pacific Mutual Life Ins. Co.* v. *Haslip*, 499 U.S. 1, 21-22, 111 S.Ct. 1032, 113 L.Ed.2d 1 (1991). *Rhône-Poulenc Agro S.A.*, slip op. at 124. Thus, we discern no error in the manner in which the punitive damages issue was submitted to the jury.

DeKalb argues that because the fraud at issue in this case did not involve a deliberate false statement or affirmative act of misconduct, the conduct complained of was not egregious enough to support an award of punitive damages. It is true that the Supreme Court in *Gore* suggested "the omission of a material fact may be less reprehensible than a deliberate false statement, particularly when there is a good-faith basis for believing that no duty to disclose exists." *Gore*, 517 U.S. at 580, 116 S.Ct. 1589. However, the Court in *Gore* also sug-

gested that the plaintiff BMW *had* a good faith basis for believing it had no duty to disclose the minor car repairs at issue in that case. *Id.* at 578, 116 S.Ct. 1589 (noting that "a corporate executive could reasonably interpret the [state] disclosure requirements as establishing safe harbors"). By contrast, DeKalb has not cited any plausible basis for believing that it had no duty to disclose the field test results at issue here, a lapse which the jury also found constituted an unlawful breach of contract.

It is true that the facts alleged herein do not demonstrate any of the criteria enhancing reprehensibility mentioned in *Gore*, such as an act of violence, disregard for the health and safety of others, a pattern of misconduct, or the exploitation of a financially vulnerable target. *See Gore*, 517 U.S. at 576, 116 S.Ct. 1589. However, we are mindful of the caution we must exercise when the determination of reprehensibility depends in meaningful part upon the credibility of witnesses, a matter as to which the jury must decide. *Cooper*, 121 S.Ct. at 1688. It is evident that much of the determination of reprehensibility in this case turned upon an evaluation of the DeKalb witnesses alleged to have concealed the Hawaii field test results, particularly Dr. Flick. Even our review of the cold record reveals several rather implausible explanations and assertions by DeKalb witnesses. In light of this, we find that DeKalb's conduct was sufficiently reprehensible to support the award of punitive damages.

DeKalb raises an additional argument regarding the reprehensibility of its conduct. DeKalb points out that North Carolina applies a "preponderance of the evidence" standard for proving fraud, whereas in most jurisdictions, fraud must be proven by clear and convincing evidence. However, this argument has been raised and rejected previously by the Supreme Court in *Haslip*:

> We have considered the arguments raised by [petitioner] Pacific Mutual and some of its *amici* as to the constitutional necessity of imposing a standard

> of proof of punitive damages higher than "preponderance of the evidence." There is much to be said in favor of a State's requiring, as many do, *see, e.g.*, Ohio Rev. Code Ann. § 2307.80 (Supp.1989), a standard of "clear and convincing evidence" or, even, "beyond a reasonable doubt," *see* Colo.Rev.Stat. § 13-25-127(2) (1987), as in the criminal context. We are not persuaded, however, that the Due Process Clause requires that much. We feel that the lesser standard prevailing [1350] in Alabama--"reasonably satisfied from the evidence"--when buttressed, as it is, by the procedural and substantive protections outlined above, is constitutionally sufficient.

Haslip, 499 U.S. at 23 n. 11, 111 S.Ct. 1032. Given that the use of a "preponderance" standard does not impact the constitutional guarantees of the Due Process Clause, we decline to consider it as a weighting factor in the constitutional analysis.

Next, we address the second *Gore* factor: whether the ratio between the harm, or potential harm, suffered by the plaintiff and the punitive damage award is reasonable. The jury awarded RPA $15 million in unjust enrichment and $50 million in punitive damages, resulting in a ratio of 3 and 1/3 to 1. Although we take to heart repeated cautions not to mark the constitutional boundary by a simple mathematical formula, e.g., *Gore*, 517 U.S. at 582, 116 S.Ct. 1589, *TXO Production Corp.* v. *Alliance Resources Corp.*, 509 U.S. 443, 458, 113 S.Ct. 2711, 125 L.Ed.2d 366 (1993), we note that this ratio is well within the ratios approved in other cases. *See, e.g., Gore*, 517 U.S. at 582, 116 S.Ct. 1589 (noting that the punitive damage award rejected by the Court was 500 times the amount of the actual harm as determined by the jury); *TXO*, 509 U.S. at 459-62, 113 S.Ct. 2711 (upholding a punitive damage award alleged to be 526 times as large as the actual damage award, while emphasizing that the magnitude of potential harm was likely much greater than the ac-

tual damages); *Haslip*, 499 U.S. at 23, 111 S.Ct. 1032 (approving a punitive damage award more than 4 times the amount of compensatory damages, while noting that this "may be close to the line").

However, before we can be content with the ratio in the present case, we must first address DeKalb's contention that the proper point of comparison is between the nominal damages of $1 and the punitive award, and not between the unjust enrichment award and the punitive award. Of course, such a comparison changes the applicable ratio to 50 million to 1, one of vastly different proportion.

DeKalb claims that under North Carolina law, it is inappropriate to base a punitive damage award on an award for unjust enrichment instead of compensatory damages. DeKalb relies on the Fourth Circuit case of *Winant* v. *Bostic*, 5 F.3d 767 (4th Cir.1993) for this proposition. *Winant* dealt with a land deal gone sour. Claiming fraud, the plaintiffs asked for the remedy of rescission and were awarded restitution presumably based upon the price they paid for the land they no longer wanted. The court then trebled the restitution amounts, relying on a North Carolina statute allowing such punitive measures. The appeals court reversed, stating:

> In a fraud case, damage is the value of the loss caused by the tortious conduct, and it is measured by the difference between what was received and what was promised by the false representation.... The remedy of rescission, on the other hand, does not include a notion of damage. It intends to undo the transaction and return the parties to their original status.... Instead of trebling damages [this action] would treble the size of the transaction.

Winant, 5 F.3d at 776.

DeKalb argues that the same logic applies here, because the remedy RPA sought and received was rescission of the 1994 Agreement. DeKalb claims that the punitive damage award improperly penalizes DeKalb for the size of the trans-

action involved, without regard to RPA's actual harm. We disagree. This case involves an award of unjust enrichment, not the return of the entire purchase price as in [1351] *Winant*. At a minimum, the unjust enrichment of DeKalb relates to the bad actions of DeKalb and resultant harm to RPA. If RPA had been informed of the value of the RD-125 construct, it would have had the opportunity to participate in the commercial success of the resultant glyphosate-tolerant corn products, which have garnered large profits for DeKalb. *Rhône-Poulenc Agro S.A.*, slip op. at 125-26. DeKalb's fraud denied RPA that opportunity for several years. Denying RPA the opportunity to profit from the technology it expended money and effort to develop certainly constitutes harm.

Furthermore, as RPA argues, the more recent case of *Mehovic* v. *Mehovic*, 133 N.C.App. 131, 514 S.E.2d 730 (1999) seems more directly relevant. In *Mehovic*, the plaintiff had foregone compensatory damages in favor of rescission. The court held that "North Carolina public policy supports an award of punitive damages upon a jury verdict establishing fraud and consequent entitlement, at the plaintiff's election, either to rescission or compensatory damages." *Mehovic*, 514 S.E.2d at 734. Although North Carolina law is not binding on the due process issue, we conclude that under the facts of this case the unjust enrichment gained by DeKalb is logically related to the harm or potential harm caused RPA, and it was appropriate to base the award of punitive damages on the unjust enrichment award.

Our examination of the ratio between the unjust enrichment and punitive damages assures us that the relationship between the two is reasonable. Additionally, we note that upon examination of the factual basis for the award of unjust enrichment, it appears that had DeKalb's fraud proceeded undetected, the potential lost opportunity and harm to RPA would have continued to increase. Thus, we find that the second *Gore* factor does not suggest that the punitive damage award in this case is unconstitutionally excessive.

Finally, we examine the third factor noted in *Gore:* comparing the punitive damage award with other available sanctions for comparable misconduct. DeKalb relies upon two recent North Carolina statutes as demonstrating that the punitive damage award is improper for several reasons. First, N.C. Gen.Stat. § 1D-25 states "punitive damages awarded against a defendant shall not exceed three times the amount of compensatory damages." N.C. Gen.Stat. § 1D-25 (2000). Also, N.C. Gen.Stat. § 1D-15 states that punitive damages may only be awarded if the aggravating factor of fraud is proven "by clear and convincing evidence." N.C. Gen.Stat. § 1D-15 (2000).

Together, these two statutes imply that a punitive damage award with a comparative ratio greater than three, based upon a showing of fraud by only a preponderance of the evidence (such as the one we have in the present case), would not be upheld under North Carolina law. However, the problem with DeKalb's reliance on these statutes as a matter of state law is that both of them were only effective as of January 1996. The two North Carolina statutes at issue here were specifically designated by the legislature to become effective as of January 1, 1996, and the North Carolina legislature made no provision for retroactivity. And the editor's note to the statute states that the statute "is applicable to claims for relief arising on or after [January 1, 1996]." N.C. Gen.Stat. § 1D-1 (2000) (editor's note); *see also Food Lion, Inc.* v. *Capital Cities/ABC, Inc.*, 984 F.Supp. 923, 936 (M.D.N.C.1997). The fraud complained of in this action occurred in 1994. But DeKalb suggests that these statutes are pertinent to our due process analysis of comparable statutes. Thus, we must determine whether it is appropriate [1352] to consider factors that were not applicable at the time of the events in question in our analysis of the third *Gore* factor.

The Supreme Court in *Gore* emphasized that the three factors it put forth regarding punitive damages were all related to the idea of providing a defendant with fair notice of the possible result of his or her actions. Specifically, the

Court stated "[e]lementary notions of fairness enshrined in our constitutional jurisprudence dictate that a person receive fair notice not only of the conduct that will subject him to punishment, but also of the severity of the penalty that a State may impose." *Gore*, 517 U.S. at 574, 116 S.Ct. 1589. Although the Court in *Gore* noted the existence of a relevant Georgia statute enacted after the events leading to the fraud claim at issue, *id.* at 569 n. 13, 116 S.Ct. 1589, the Court concluded its analysis of the sanctions for comparable misconduct by stating:

> Moreover, *at the time [defendant's] policy was first challenged,* there does not appear to have been any judicial decision in Alabama or elsewhere indicating that application of that policy might give rise to such severe punishment.

Id. at 584, 116 S.Ct. 1589 (emphasis added).[4]

Applying the rationale of fair notice to the case at hand, we in sum hold that subsequent changes in the law occurring after the misconduct has taken place are not relevant as an example of a comparable sanction. The changes in North Carolina law that occurred after DeKalb decided to commit its fraudulent conduct cannot be argued to have provided notice or guidance to DeKalb at that time. Thus, only comparable sanctions available at the time of the misconduct will be considered in our analysis.

DeKalb cites no additional statutes tending to indicate that the punishment which might have been expected for its conduct was less severe than that which DeKalb actually received. We note that North Carolina criminal statutes in

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[4] It could be argued that this language suggests that it is the timing of the filing of the complaint, rather than the timing of the fraudulent event, that is actually relevant. However, the filing of the complaint is not the point in time at which the defendant must choose whether or not to commit the fraudulent conduct by considering what penalty might result. Rather, this choice and comparison is made at the time at which the fraudulent conduct occurs.

1994 made obtaining property by false pretenses a felony punishable by a term of incarceration and a fine at the discretion of the court. *Rhône-Poulenc Agro S.A.*, slip op. at 127-28. Given the lack of any statute or rule limiting or barring the imposition of punitive damages in North Carolina at the time of DeKalb's fraudulent conduct, our review of comparable statutes does not indicate any potential constitutional problem.

Thus, our *de novo* review of the three factors listed in *Gore*, as well as the criteria noted in *Cooper*, fails to detect any constitutional infirmity in the award of punitive damages.

In future cases, we suggest that district courts consider creating a record that will enable the district court, on post-trial motions, and courts on appeal to determine with greater certainty what the jury fact-findings regarding punitive damages actually were. In general, this may suggest use of special interrogatories under Rule 49 of the Federal Rules of Civil Procedure. Without specific jury findings on issues that result in punitive damages awards, we will be left to speculate as to what the jury "may" or "might" have concluded. *See Cooper*, 532 U.S. 424, 121 S.Ct. at 1688, 149 L.Ed.2d 674. If the [1353] district courts and we are to exercise our de novo review authority with confidence, the facts should be as clearly expressed as possible to permit application of the law to those facts. In bench trials, detailed findings of fact on punitive damages issues will, of course, be equally important.

IV

Rescission of the 1994 Agreement

Due to the jury's ruling that the 1994 Agreement was procured through fraud, the district court rescinded the 1994 Agreement to return the parties to the *status quo ante*. The district court determined that this meant that DeKalb retained no rights to the RD-125 technology (which includes both the OTP and the DMMG), because the original 1985/1991

Agreement did not cover this technology. The district court then ruled that DeKalb was barred from presenting to the jury a defense that it was licensed to use the OTP and the RD-125 construct under a 1992 modification to the 1985/1991 Agreement in the second phase of the trial regarding trade secret misappropriation and patent infringement, because all possible license rights were determined in the first phase of the trial. DeKalb contests the district court's determination of the *status quo ante* after rescission of the 1994 Agreement, and the resulting decision to bar it from using a licensing defense in the second trial.

First, DeKalb argues that RPA's pleadings constituted a judicial admission that the DMMG was transferred pursuant to a modification of the 1985/1991 Agreement that authorized DeKalb to commercialize the technology. Pleadings are judicial admissions and a party may use them to render facts indisputable. *See Help At Home Inc.* v. *Medical Capital, L.L.C.*, 260 F.3d 748, 2001 WL 902462, *6 (7th Cir.2001). However, the pleading language cited by DeKalb states only that "[u]nder the [1991 Agreement], DeKalb was required to keep RPA informed of its accomplishments and progress." This very general pleading language does not explicitly mention either the DMMG or RD-125, nor does it mention anything regarding an authorization of commercial rights. Such a pleading by RPA is simply not explicit enough to constitute the judicial admission that DeKalb alleges, and therefore we find these contentions lack merit.

Next, DeKalb relies upon the jury verdict itself to argue that RPA granted DeKalb a license to commercialize the DMMG technology. The jury verdict form regarding fraud contained four different questions relating to the status of the agreements between DeKalb and RPA, which the jury answered in the following manner:

> 1. Has RPA proven by a preponderance of the evidence that DeKalb agreed to provide RPA with the

results of its testing in return for receiving the double mutant maize EPSPS genes?

Answer: yes

(a) Was the agreement formed orally at the November 1992 meeting in Mystic, Connecticut?

Answer: yes

(b) Was the agreement formed through the conduct of RPA and DeKalb at or following the Mystic meeting in November of 1992?

Answer: yes

(c) Was the agreement formed through the conduct of the parties as a modification of the 1985/1991 written agreements?

Answer: yes

DeKalb argues that because the jury answered question 1(c) in the affirmative, a 1992 modification to the 1985/1991 Agreement was formed that potentially provided DeKalb with rights to the disputed technology. [1354] The original 1985/1991 Agreement provided DeKalb with commercial rights to use the C-aroA gene technology and patents. DeKalb claims that because the DMMG was transferred pursuant to a 1992 modification of the 1985/1991 Agreement, the same terms must apply to the DMMG, *i.e.*, DeKalb must also have been granted similar commercial rights to the DMMG.

DeKalb's arguments read far too much into the alleged terms of the 1992 modification. The jury's affirmative verdict 1(c) answer means that the parties modified the 1985/1991 Agreement such that, pursuant to the jury's affirmative answer in question 1, RPA agreed to provide DeKalb with the DMMG in return for DeKalb sharing test results. Nothing in the jury verdict form suggests that RPA additionally agreed to provide DeKalb with commercial rights to the DMMG technology.

DeKalb relies upon *Deien Chevrolet, Inc.* v. *Reynolds & Reynolds Co.*, 265 Ill.App.3d 842, 203 Ill.Dec. 390, 639 N.E.2d 949 (1994), to argue that the original contract terms applicable to the C-aroA technology must apply to the DMMG technology as well.[5] According to DeKalb, *Deien* dictates that essential terms in the original agreements apply to any modifications, and since the commercial rights granted are an "essential term" of the original 1985/1991 Agreement, these terms must apply to *any* modification of the products covered by the 1985/1991 Agreement.

We disagree. The contract at issue in *Deien* was quite different from the one at issue here. *Deien* involved a "Master Agreement" which set forth the general rights and obligations of the parties, with a set of exhibits. The court in *Deien* merely found that because the modification related to changes to an exhibit, the rights under the Master Agreement were not affected. However, *Deien* cannot be stretched in the way DeKalb urges in order to mandate that the 1992 oral modification found in jury verdict 1(c) constituted a specific grant of commercial rights to the DMMG. The 1992 modification in the present case is not merely a modification of a peripheral exhibit to the original agreement, as in *Deien*.

The 1992 modification relates to a different technology, the DMMG, which was not even mentioned in the original 1985/1991 Agreement. The jury was never asked to find that the 1992 modification further constituted a modification of the commercial license agreement itself, which in the original 1985/1991 Agreement only covered the genes of the Comai patents. DeKalb cannot now presuppose that any modification must necessarily implicate the commercial licensing provisions of the original contract. If DeKalb wanted the jury to find that a modification was made to the commercial

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[5] The 1985 Agreement between RPA and DeKalb contained an Illinois choice-of-law provision, and therefore Illinois law applies to the interpretation of the contracts at issue.

licensing provisions, it should have argued and submitted this issue to the jury explicitly.

Additionally, RPA points out that even if some type of binding license or grant of commercial rights to the DMMG technology was created by the 1992 modification, this modification required DeKalb to disclose the Hawaii field test results, which DeKalb did not do. As the district court's opinion notes, the first jury specifically found that DeKalb breached the modification of the 1985/1991 Agreement by not disclosing the test results. *Rhône-Poulenc Agro S.A.*, slip op. at 12. It is clear that this would constitute a material breach of the modified agreement, despite DeKalb's protestations to the contrary. [1355] Thus, any commercial license granted by the modification would be unenforceable.

In response, DeKalb states that any breach affecting the 1994 Agreement could not affect the 1985/1991 Agreements. However, this misstates the issue: the relevant breach would be a breach of the 1985/1991 Agreement *as modified* in 1992. Therefore, even if DeKalb could prove that the 1992 oral modification granted it commercial rights to the DMMG technology, because DeKalb materially breached the modified agreement, it cannot enforce it. Thus, we find that the district court did not err in its determination of the *status quo ante* existing after the rescission of the 1994 Agreement.

DeKalb makes several related arguments in claiming that it should have been allowed to present a licensing defense in the second phase of trial covering the patent infringement and trade secret misappropriation claims. However, it was DeKalb who originally requested a bifurcation of the trial into two different phases, and it must live with the consequences of that action. The intent of the bifurcation was to resolve the licensing and contract issues in the first phase of trial. *Rhône-Poulenc Agro S.A.*, slip op. at 37-8. Although DeKalb now claims that the licensing defense it wished to present in the second trial would have involved different evidence than that presented in the first trial, DeKalb cites no

such evidence. The evidence and testimony presented during the first trial involved both the 1985/1991 Agreement and any subsequent modifications, as well as the 1994 Agreement. Furthermore, the jury verdict form covered both agreements. In addition, as discussed previously, the "license" DeKalb desired to advocate in the second trial would have been unenforceable due to DeKalb's material breach of the terms of the 1992 modification to the 1985/1991 Agreement. Therefore, the district court properly excluded this licensing defense from the second trial.

V

Patent Infringement Defenses

RPA charged DeKalb with infringement of claim 11 of the '471 patent, and DeKalb has conceded infringement of this claim. *Rhône-Poulenc Agro S.A.*, slip op. at 12. DeKalb presented two different defenses to RPA's claim of patent infringement: inequitable conduct by RPA during the procurement of the '471 patent, and obviousness of claim 11 pursuant to 35 U.S.C. § 103. We address each of these arguments in turn.

A

Inequitable Conduct

DeKalb claims that a 37 C.F.R. § 1.132 declaration filed by RPA during prosecution (a declaration submitted to traverse an Examiner's rejection) contained material omissions and therefore constituted inequitable conduct with regard to the '471 patent. Both an advisory jury and the district court disagreed. We review the district court's ultimate determination of the inequitable conduct issue using an abuse of discretion standard. *PerSeptive Biosystems, Inc.* v. *Pharmacia Biotech, Inc.*, 225 F.3d 1315, 1319, 56 USPQ2d 1001, 1003 (Fed.Cir.2000).

The district court's opinion provides a detailed and thorough discussion of the inequitable conduct issue. *See Rhône-Poulenc Agro S.A.*, slip op. at 85- 102. The '471 patenthttp://www.westlaw.com/Find/Default.wl?rs=dfa1.0&vr=

2.0&FindType=Y&SerialNum=1996337140 claim 11 was written to cover the OTP (optimized transit peptide). The declaration at issue was filed by Dr. LeBrun of RPA to rebut an obviousness rejection over a prior art publication discussing the genes of the Comai patent ("the Comai publication").

[1356] The Comai publication also involved the goal of achieving glyphosate resistance in plants. It was known in the art that glyphosate tolerance could be achieved by introducing some type of EPSPS protein into a plant cell's chloroplasts. A transit peptide is required to import the EPSPS protein into the chloroplasts, and in nature, once this type of protein import is complete, an enzyme removes the transit peptide to leave a "mature" protein. *Rhône- Poulenc Agro, S.A.*, slip op. at 62.

Dr. Comai attached a bacterial EPSPS gene to a transit peptide from a sunflower "Rubisco" (ribulose-1-5-biphosphate carboxylase) protein.[6] However, even with this transit peptide, the chloroplast import machinery will not recognize the foreign bacterial protein and generally will not allow entry into the chloroplast. To solve this problem, Dr. Comai attached to the transit peptide a short region of the "mature" sunflower Rubisco protein, also called an "N-terminal extension." In laymen's terms, this N-terminal extension "fools" the chloroplast into admitting the attached protein.

The Examiner's obviousness rejection concerned whether or not the effect of adding a second transit peptide to the prior art Comai structure was of patentable significance. The prior art structure generally consisted of "TP + AA," where TP is a transit peptide and AA is an N-terminal extension (a specified number of amino acids of a protein). The Comai publication referenced by the Examiner had the spe-

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[6] Bacterial EPSPS proteins do not naturally comprise transit peptides.

cific structure: TP + 24AA (24 AA denotes a 24 amino acid N-terminal extension). Claim 11 of the '471 patent states:

> 11. A nucleic acid construct which codes for a polypeptide sufficient for localization of a gene product in a chloroplast of a plant cell which polypeptide comprises a fusion which in the direction of translation comprises a first chloroplast transit peptide from a sunflower ribulose 1,5 bisphosphate carboxylase small subunit, approximately 22 amino acids from the N-terminal region Of [sic] a mature maize ribulose 1,5 bisphosphate carboxylase small subunit and a second chloroplast transit peptide from a maize ribulose 1,5 bisphosphate carboxylase small subunit.

'471 patent, col. 7, line 7-col. 8, line 7. This claim denotes a construct of the following basic structure: TP + AA + 2dTP (2dTP denotes the second transit peptide).

In order to demonstrate the effectiveness of the second transit peptide, the LeBrun declaration compared the "294 construct" (TP + 22AA) with the "410 construct" (TP + 22AA + 2dTP). By using the same N-terminal extension, this test was designed to predict the difference resulting only from the addition of the second transit peptide. DeKalb argues that it was a material omission not to include an allegedly less favorable comparison between the "297 construct" (TP + 33AA) and the 410 construct. However, as the district court and RPA point out, comparing the 297 and the 410 constructs would not demonstrate the benefit of only adding the second transit peptide, since the change in the number of amino acids of the N-terminal extension might also produce an unknown effect. Thus, this argument by DeKalb fails.

DeKalb's additional allegations regarding purportedly false and misleading greenhouse and field tests results reported in the LeBrun declarations are similarly unconvincing. These allegations are amply refuted by the district court's opinion. *Rhône-Poulenc Agro, S.A.*, slip op. at 96-9. There-

fore, we affirm the district court's determination that RPA did not commit inequitable conduct.

[1357] **B**

Obviousness

"This court reviews the district court's conclusions on obviousness, a question of law, without deference, and the jury's underlying findings of fact for substantial evidence." *Elec. Sci. Indus. Inc.* v. *Gen. Scanning, Inc.*, 247 F.3d 1341, 1349, 58 USPQ2d 1498, 1503 (Fed.Cir.2001). First, DeKalb argues that the Comai publication alone renders claim 11 of the '471 patent obvious. DeKalb claims that the structural variation between the two, i.e., the second transit peptide, is an "irrelevant" variation, and therefore the claim is obvious. DeKalb cites *In re Dillon*, 919 F.2d 688, 692-94, 16 USPQ2d 1897, 1900-02 (Fed.Cir.1990), for this proposition. In Dillon, this court affirmed a determination of obviousness for hydrocarbon fuel claims where the PTO established: (1) the only structural distinction over the prior art was the use of tetra-orthoesters versus tri- orthoesters, and (2) it was known in the fuel oil arts that there was a sufficiently close relationship between tri-orthoesters and tetra-orthoesters such that similar properties would be expected. *Id.*

In order to draw the *Dillon* analogy, DeKalb must demonstrate that in the relevant field of art, plant molecular biology, it was expected that constructs imparting glyphosate tolerance would have similar properties with and without a second transit peptide. DeKalb points to no evidence that demonstrates any expectation in the relevant field of art regarding the effect of a second transit peptide on glyphosate tolerance constructs, or indeed, any type of genetic construct. Furthermore, substantial evidence was presented at trial demonstrating that the second transit peptide, far from being a "useless structural variation" as claimed by DeKalb, serves an important purpose. Testimony was introduced to explain that in the Comai construct without a second transit peptide, the N-terminal extension remains attached to the EPSPS passen-

ger protein once it is inside the chloroplast, decreasing the efficiency of the EPSPS enzyme. In contrast, the addition of the second transit peptide allows the entire construct, including the N-terminal extension, to be cleaved off from the EPSPS passenger protein. The removal of the N-terminal extension may increase the efficiency of the EPSPS passenger protein inside the chloroplasts. *Rhône-Poulenc Agro S.A.*, slip op. at 65-66. Thus, we affirm the district court's ruling that the Comai publication alone does not render claim 11 of the '471 patenthttp://www.westlaw.com/Find/Default.wl?rs=dfa1.0&vr=2.0&FindType=Y&SerialNum=1996337140 obvious.

DeKalb also argues that the combination of the Comai publication with U.S. Patent No. 5,776,760, issued to Barry et al. ("Barry") renders the '471 patent obvious. The Barry patent is also directed towards the production of glyphosate-tolerant plants, although Barry uses Rubisco protein from Arabidopsis (a species of mustard plant), as opposed to the sunflower and maize Rubisco used in the Comai and '471 patent constructs. *Rhône-Poulenc Agro, S.A.*, slip op. at 67. The Comai publication, as noted previously, discloses the structure TP + AA (a first transit peptide combined with an N- terminal extension), whereas the OTP of the '471 patent claims TP + AA + 2dTP (i.e., the addition of a second transit peptide).

DeKalb argues that Barry also shows the addition of a second transit peptide. However, DeKalb admits that the precise combination of Comai and Barry does not yield the patented invention. Barry contains a first transit peptide from a Rubisco gene attached to an N-terminal extension, 23 amino acids in length, from a mature Rubisco gene. Barry does not contain an additional full second transit peptide, but instead includes the last eight amino acids [1358] of the end of a Rubisco transit peptide. Thus, at best, Barry contains a fragment of a second transit peptide.

However, DeKalb argues that the fragment of a second transit peptide in Barry serves the same purpose as the full transit peptide in the '471 patent, and therefore effectively teaches the addition of a second transit peptide. As discussed above, the second transit peptide allows the N-terminal extension to be cleaved off from the passenger protein inside the chloroplast. The addition of this second cleavage site is allegedly beneficial to the efficiency of the passenger protein.

DeKalb offered testimony from their expert, Dr. Dewey, that Barry discloses a second cleavage site. However, Dr. Dewey was unable to indicate any specific passage in the Barry patent that teaches the use or importance of a second cleavage site; all Dr. Dewey was able to point to was the conclusion that the construct in the Barry patent works. In an obviousness determination, some evidentiary support must be offered beyond an expert's conclusory opinion. *Upjohn Co.* v. *Mova Pharm. Corp.*, 225 F.3d 1306, 1311, 56 USPQ2d 1286, 1290 (Fed.Cir.2000). In addition, RPA's expert Dr. DeRose testified that the Barry patent does not disclose a second transit peptide or a second cleavage site. Given the structural differences between the second transit peptide of the '471 patenthttp://www.westlaw.com/Find/Default.wl?rs=dfa1.0&vr=2.0&FindType=Y&SerialNum=1996337140 and the transit peptide fragment in Barry, it was reasonable for the jury to conclude that the Barry patent does not teach a second transit peptide or a second cleavage site.

Additionally, even if Barry does teach some variant of adding a second transit peptide, DeKalb must still provide some evidence of a motivation to combine the Barry and Comai publication references. *See, e.g., C.R. Bard, Inc.* v. *M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed.Cir.1998) (stating that there must be some suggestion or teaching in the prior art to make the combination alleged to render the device obvious); *Ruiz* v. *A.B. Chance Co.*, 234 F.3d 654, 665, 57 USPQ2d 1161, 1167(Fed.Cir.2000)(noting that the required motivation to combine may be found either

explicitly or implicitly in the prior art references, the knowledge of those of ordinary skill in the art, or the nature of the problem to be solved).

DeKalb cites to no specific language in either the Comai publication or the Barry patent demonstrating a motivation to combine. DeKalb merely refers to Barry's "inherent teachings" without further explanation. Therefore, we agree with the district court's determination that claim 11 of the '471 patent is not obvious.

VI
Trade Secret Misappropriation

The jury found that RD-125 was a trade secret of RPA. The jury also found that RD-125 ceased to be a trade secret when RPA's PCT application for the technology was published in February 1997. However, the jury failed to find that DeKalb's PCT application (WO 95/06128), published in May 1995, constituted a similar disclosure of the RD-125 trade secret. DeKalb contests only the finding that DeKalb's PCT application did not constitute a disclosure of the RD-125 trade secret. DeKalb's argument is that RD-125 lost its trade secret status upon publication of the PCT application in May 1995. The issue of trade secret misappropriation is a matter of state law. *Group One, Ltd.* v. *Hallmark Cards, Inc.*, 254 F.3d 1041, 1049, 59 USPQ2d 1121, 1127 (Fed.Cir.2001). In the present case, the parties agreed that North Carolina was the proper law to apply, and the district court applied North Carolina law. *Rhône-Poulenc Agro, S.A.*, slip op. at 78 n. 29.

[1359] DeKalb contests (1) the exclusion of evidence related to the teachings of DeKalb's PCT application, claiming that this evidence proves that DeKalb's PCT application did indeed disclose the RD-125 trade secret, and (2) the refusal to find a judicial admission that the trade secret was disclosed. However, we find that a broader rule of law renders these issues moot. In the particular facts and circumstances of this case, DeKalb's PCT publication cannot be used to

demonstrate the disclosure of RPA's trade secret, because this would allow DeKalb to unfairly benefit from their own wrongful conduct.

Typically, the publication of a patent terminates all trade secret rights. *See, e.g., Scharmer* v. *Carrollton Mfg. Co.*, 525 F.2d 95, 99 (6th Cir.1975). RPA does not contest that its own PCT publication in February 1997 constituted a disclosure terminating all claims to a trade secret.[7] However, in the present case the jury found, and the district court affirmed, that DeKalb did not have RPA's permission to include RD-125 in its May 1995 PCT application. DeKalb has not appealed this finding, and therefore whatever disclosure DeKalb made of the RD 125 technology in its PCT application constituted a wrongful use.

Courts have carved out an exception to the general rule that publication terminates all trade secret rights in cases where the wrong-doer is the one who has published the trade secret. For example, the Seventh Circuit has stated:

> Here the holder of the trade secret did not make an election to obtain a patent, but instead it was appellants who had misappropriated the trade secrets and secured the patent. In 1936 we held in *Shellmar Products Co.* v. *Allen- Qualley Co.*, 87 F.2d 104 (7th Cir.1936), *cert. denied*, 301 U.S. 695, 57 S.Ct. 923, 81 L.Ed. 1350 (1937), that a wrongdoer who has made an unlawful disclosure of another's trade secrets cannot assert that publication to escape the protection of trade secret law. We believe that principle to be equally vital today. To hold otherwise in

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[7] Certain federal courts have held that a party misappropriating trade secrets may be enjoined permanently from using the information, even if it becomes public knowledge later. The relevant cases on both sides of the issue are discussed in *American Can Co.* v. *Mansukhani*, 742 F.2d 314, 334 (7th Cir.1984). Because RPA has not requested damages for trade secret misappropriation following their own February 1997 PCT disclosure, this split in authority is not at issue in this case.

> the instant case would be to permit appellants to profit from their own wrong.

Syntex Ophthalmics, Inc. v. *Tsuetaki*, 701 F.2d 677, 683 (7th Cir.1983).

Additionally, the court in *Glaxo Inc.* v. *Novopharm Ltd.*, 931 F.Supp. 1280, 1300 (E.D.N.C.1996), applying North Carolina law concluded that "it is true that parties responsible for the dissemination of another's trade secret may not benefit from the disclosure." *See also Forest Labs., Inc.* v. *Formulations, Inc.*, 299 F.Supp. 202, 207 (E.D.Wis.1969) (stating "[t]he general rule is that the issuance of a patent which clearly discloses all essentials of a process destroys any secrecy that previously attached to that process. *Ferroline Corp.* v. *General Aniline and Film Corp.*, 207 F.2d 912 (7th Cir.1953). However, if there is a wrongful use or disclosure prior to the issuance of the patent, the wrongdoer will not be absolved from liability for his wrong committed during that prior period. *Engelhard Industries, Inc.* v. *Research Instrumental Corp.*, 324 F.2d 347 (9th Cir.1963)."). Therefore, assuming arguendo that DeKalb's PCT application did disclose the RD-125 trade secret, we hold that DeKalb [1360] in this case cannot use its own wrongful disclosure of RPA's trade secrets in order to overcome a claim of trade secret misappropriation. We therefore affirm the ruling of trade secret misappropriation.

VII

For the reasons stated above, we affirm the rulings of the district court.

COSTS

No costs.
AFFIRMED.

APPENDIX B

United States Court of Appeals
for the Federal Circuit

ORDER
[FILED: Mar. 26, 2002]

A combined petition for panel rehearing and for rehearing en banc having been filed by the APPELLANT, and a response thereto having been invited by the court and filed by the APPELLEE, and the petition for rehearing been referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for panel rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for panel rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on April 2, 2002.

Circuit Judge Michel did not participate in the vote.

FOR THE COURT
/s/ Jan Horbaly (AV)
Jan Horbaly
Clerk

Dated: March 26, 2002

cc: John F. Lynch
George Pazuniak

Note: Pursuant to Fed. Cir. R. 47.6, this order is not citable as precedent. It is a public record.

APPENDIX C

UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

RHONE-POULENC AGRO S.A., Plaintiff,
v.
MONSANTO COMPANY and DEKALB GENETICS CORP., Defendants.

No. 1:97CV1138

February 8, 2000, Decided
February 8, 2000, Filed

[2000 U.S. Dist. LEXIS 21330]

TILLEY, Chief Judge

Three of Plaintiff Rhone-Poulenc Agro S.A.'s ("RPA") claims were adjudicated before juries during two separate phases, culminating on June 2, 1999. This Memorandum Opinion will address several post-trial issues. This Opinion will also discuss for the record the reasoning for several rulings made by the Court during the course of the trial.[1]

I. FACTUAL HISTORY

The facts of the case, stated in the light most favorable to the prevailing party, RPA, are as follows.

RPA is a worldwide manufacturer and vendor of diversified agricultural products, and is engaged in chemical and

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[1] Since this opinion contains a number of cross references, an Index has been placed on the last two pages to assist in locating specific sections.

biotechnological research and development with particular [*5] interests in the area of weed control and crops. Defendant Monsanto Company ("Monsanto") manufactures and sells a diversified line of agricultural products as well, including herbicides, and is engaged in biotechnological research and development. Defendant DeKalb Genetics Corporation ("DeKalb"), which became a fully-owned subsidiary of Monsanto in December 1998, is involved in agricultural genetics and biotechnology for corn seed, and is one of the largest corn seed suppliers in the United States.

This case involves sophisticated biotechnology and genetic engineering. Monsanto produces a herbicide called Roundup, whose active ingredient is glyphosate. Glyphosate is an effective, yet environmentally safe, herbicide that, appropriately applied, will kill all green foliage with which it comes into contact. This case involved research and development of genetically engineered corn that is tolerant to glyphosate herbicides, such as Roundup. The ability to grow glyphosate-tolerant corn increases the efficiency of farmers, because they can spray glyphosate herbicide over the entire crop of corn, killing all of the weeds but not damaging any of the corn plants.

In 1985, DeKalb and Calgene, [*6] Inc. ("Calgene") entered into an agreement for the joint development of crops containing Calgene's C-AroA, or CT-7, gene[2] (an "EPSPS" gene derived from salmonella bacteria) that would make corn crops tolerant to glyphosate (the "1985 Agreement"). The 1985 Agreement called for the formation of a "Project Review Committee," composed of scientists from each company, that would have general oversight responsibility for the progress of each party under the agreement. It also provided for various royalty payments to be made by DeKalb to Calgene for products developed under the agreement. As part of

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[2] This C-AroA, or CT-7, gene is the gene contained in patents referred to throughout the trial as the "Comai" patents.

the 1985 Agreement, DeKalb received an exclusive license to the Comai patents in the field of use of corn. In 1991, RPA, DeKalb, and Calgene entered into an "Assignment and Assumption Agreement," (the '1991 Agreement") whereby RPA assumed Calgene's rights and obligations under the 1985 Agreement. These agreements often are referred to together as the "1985/1991 Agreements."[*7]

The 1985/1991 Agreements dealt only with the CT-7 gene; however, RPA and DeKalb were involved together in a broader collaboration with the ultimate goal of genetically altering corn to make it resistant to glyphosate. In the collaboration, RPA performed the initial genetic work by creating various genetic constructs. Then, DeKalb "transformed" corn cells by placing RPA's constructs into corn cells, grew full corn plants from the transformed cells in the greenhouse, and finally, in the field, grew full corn plants from the seeds of the greenhouse plants. At each stage, DeKalb tested the transformed cells and plants for glyphosate resistance. Neither party had the capability to perform the other party's role in this collaboration, and both roles were necessary in order to produce glyphosate resistant corn.

Under this collaboration, genetic material other than the CT-7 gene was transferred from one company to the other. On June 17, 1991, at the first joint meeting of RPA and DeKalb after the 1991 Agreement was signed, the companies agreed that any material transferred between the companies would be subject to a Confidentiality Agreement originally entered into by Calgene and DeKalb [*8] in 1984. Material transferred under this Confidentiality Agreement was to be used for "the limited purpose of . . . investigation and evaluation. No rights to manufacture, license or otherwise deal in or with the Information shall be acquired by the receiving party, directly or indirectly, by reason of its receipt of the Information." (Pl.'s Ex. 1, 1984 Confidentiality Agreement P 4.) The term "Information" was defined to include, among other

things, maize regulatory sequences, maize transposable elements, and corn genes. (*Id.* P 2.)

At a November 1992 meeting, Dr. Georges Freyssinet of RPA told Dr. Catherine Mackey of DeKalb that RPA would provide to DeKalb new genetic material containing a mutated EPSPS gene from corn (as opposed to the bacterial CT-7 gene) on which RPA had been working. In return for providing these new constructs, Dr. Mackey agreed that DeKalb would provide RPA with the results of its testing of the constructs.[3] Also at this meeting, RPA notified DeKalb of its decision to withdraw from at least some of its responsibilities under the 1985/1991 Agreements.[*9]

When Dr. Freyssinet returned from this meeting, he requested that Dr. Rick DeRose, an RPA scientist, prepare various constructs of the mutated corn gene to send to DeKalb. Pursuant to that end, Dr. DeRose combined an optimized transit peptide ("OTP") with a maize EPSPS gene that had been mutated at two different locations in the amino acid sequence (the "double mutant maize EPSPS gene"). This new construct, consisting of the OTP and the double mutant maize EPSPS gene, is the subject of RPA's trade secret misappropriation claim, and was designated as "RD-125." The OTP is covered by Claim 11 of U.S. Patent 5,510,471 (" '471 patent")[4] and is the subject of RPA's pat-

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[3] Whether Drs. Freyssinet and Mackey entered a binding agreement was contested in the first trial of this matter. The jury determined, among other things, that an agreement was made at this November 1992 meeting.

[4] On December 14, 1999, the '471 patent was reissued as Patent RE 36,449. In this Opinion, the Court will continue to use the '471 designation.

ent infringement claim. Dr. DeRose transferred RD-125 to DeKalb in February 1993.[5] [*10]

In late 1993 and early 1994, in a greenhouse, DeKalb succeeded in growing transformed corn plants that contained RPA's RD-125 construct and were resistant to Roundup herbicide at potentially commercial levels. On February 18, 1994, DeKalb sent RPA a report of its results, stating that:

> We have now demonstrated tolerance in transgenic plants in the greenhouse to up to four times the field application recommended by Monsanto for tolerant corn! We will repeat these experiments in the field in the summer of 1994. It is obvious from these results that the mutant maize gene has been the key to success.

(Pl.'s Ex. 241.) Dr. Freyssinet of RPA responded with a three sentence letter stating: "I thank you for the report on development of glyphosate resistant corn. The results look good[.] I hope they will be confirmed by the field experiments." (Pl.'s Ex. 242.) Then, on March 10, 1994, DeKalb sent RPA another letter that once again mentioned the summer field trials and the gains in glyphosate tolerance DeKalb had achieved in the greenhouse with RD-125. (Pl.'s Ex. 245.) In addition, that letter requested RPA's opinion regarding the use of RD-125 for other projects, and also [*11] requested a response to the "many questions" that need to be answered regarding the "recent successes" of RD-125. (*Id.*)

DeKalb conducted field tests in Hawaii in the summer of 1994, and on September 6, 1994, DeKalb received results from the tests that indicated that corn plants containing RPA's RD-125 were resistant to four times the normal level of Roundup herbicide. The report from the field testing was not sent to RPA. Rather, on September 7, 1994, Dr. Chris

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[5] Dr. DeRose transferred other constructs to DeKalb at the same time; however, only the content and combination of the RD-125 are the subject of this lawsuit.

Flick of DeKalb sent RPA a letter which stated, in its entirety, that:

> As the results that we have obtained in maize with the glyphosate resistant double mutant maize gene provided by RPA to DEKALB have been very encouraging, we are interested in whether this gene would also function as a selectable marker in soybeans. Is it possible for DEKALB to use this gene in soybeans as a selectable marker?
>
> I will await your answer.

(Pl.'s Ex. 310.) In 1994, these letters were the extent of the communications between DeKalb and RPA regarding RD-125 and its introduction into corn lines. Following the tests, DeKalb immediately began backcrossing the plants with RD-125 with its Elite lines of corn. (April 14, 1999 tr. p. [*12] 230; April 15, 1999 tr. pp. 41, 42)

Also during the summer of 1994, Calgene and RPA filed a patent infringement action against Monsanto in which Calgene and RPA accused Monsanto of using the patented technology contained in the Comai patents in making, using, and selling glyphosate resistant soybeans. Calgene owned the Comai patents, and RPA had certain exclusive rights under these patents in soybeans. DeKalb also had an interest in the litigation, because under the 1985 Agreement, DeKalb was the exclusive licensee of the Comai patents in the field of use of corn.

In December 1994, two agreements were negotiated arising from these events. First, RPA, Calgene, and Monsanto agreed to a settlement of the patent litigation begun in July 1994. Monsanto paid $ 8 million in return for a co-exclusive license (shared in part with DeKalb) under the Comai patents, for use in all fields. Concurrent with this settlement process, RPA and DeKalb entered a new agreement (the "1994 Agreement") in which DeKalb agreed to share its exclusive license under the Comai patents in the field of use of corn with Monsanto. Under the 1994 Agreement, DeKalb

was provided with $ 500,000 as its share of the Monsanto [*13] settlement proceeds. Moreover, the 1994 Agreement dissolved the 1985 and 1991 Agreements, and RPA granted DeKalb the "world-wide, paid-up right to use" various technologies, including RD-125, in the field of use of corn. The 1994 Agreement also gave DeKalb "the right to grant sublicenses to the aforementioned right to use" the technologies.

DeKalb eventually developed a glyphosate-tolerant corn line containing RD-125, named the "GA21 corn line." In January 1996, DeKalb and Monsanto entered an agreement to work together on a variety of projects, including glyphosate-tolerant corn, and DeKalb licensed to Monsanto the GA21 corn line, which included the RD-125 construct. Subsequently, corn seeds from GA21 were commercialized and marketed by Monsanto and DeKalb under the brand name "Roundup Ready." Sales of Roundup Ready corn seeds began in 1998.

Other facts will be discussed as needed in the legal conclusions sections of this Opinion, *infra*.[6] [*14]

II. PROCEDURAL HISTORY

RPA's First Supplemental and Amended Complaint ("Complaint") contained six claims: (I) misappropriation of RPA technology by DeKalb and Monsanto; (II) breach of the 1991 Agreement by DeKalb; (III) breach of the covenant of good faith and fair dealing as to the 1994 Agreement by DeKalb; (IV) rescission of the 1994 agreement; (V) patent infringement against Monsanto and DeKalb; and (VI) antitrust violations against Monsanto and DeKalb. (*See* Compl. [Doc. # 68].) Count II was dismissed with prejudice pursuant to a stipulation approved by the Court on February 2, 1999. (Stipulation of Voluntary Dismissal [Doc. # 242], at 1.) Both

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[6] An index can be found at the end of this Opinion. The index indicates the page number on which each section and subsection of the Opinion begins.

Defendants have filed motions to dismiss Count VI, which are under consideration by the Court. Discovery on Count VI has been postponed until after the Court rules on these motions.

DeKalb initially made two counterclaims: (I) RPA's breach of the 1994 Agreement; and (II) RPA's breach of the 1991 Agreement. (DeKalb's Answer [Doc. # 78].) The first counterclaim was dismissed pursuant to a stipulation approved by the Court on February 2, 1999. (Stipulation of Voluntary Dismissal [Doc. # 242], at 1.)

Monsanto initially made [*15] a single counterclaim for tortious interference. (Amended Answer and Countercl. [Doc. # 74].) However, this counterclaim also was dismissed pursuant to a stipulation approved by the Court on February 2, 1999. (Stipulation of Voluntary Dismissal [Doc. # 242], at 1.)

On February 23, 1999, both Defendants amended their Answers to include subsequent counterclaims. (DeKalb's Amended Counterclaim [Doc. # 260]; Monsanto's Amended Counterclaim [Doc. # 261].) DeKalb made three counterclaims: (I) breach of the 1994 Agreement; (II) breach of the Covenant of Good Faith and Fair Dealing of the 1994 Agreement; and (III) patent infringement. Monsanto made three counterclaims as well: (I) breach of the 1994 Settlement Agreement; (II) breach of the covenant of good faith and fair dealing of the 1994 Settlement Agreement; and (III) patent infringement.

Granting a motion by the Defendants, the Court bifurcated the trial of RPA's claims so that a first jury would resolve the issues of licensing and ownership of RD-125, and if necessary (i.e., if DeKalb and Monsanto were not licensed), a second jury would consider RPA's patent claim. Cross-motions for summary judgment were filed prior to the [*16] first phase. The Court denied summary judgment on RPA's rescission claim, and deferred decision on the remaining

counts until after it was determined in the first trial whether the 1994 Agreement would be rescinded.

On April 21, 1999, at the end of the first phase, the jury found that RPA agreed to allow DeKalb to use the RD-125 construct in return for DeKalb's agreement to provide the results of its testing to RPA. The jury found that this agreement existed in three forms: as an oral contract made between Dr. Freyssinet of RPA and Dr. Mackey of DeKalb at the Mystic, Connecticut meeting in November 1992; as an implied contract formed by the parties' conduct after the Mystic meeting; and as a modification of the 1985/1991 Agreements. (Jury Verdict [Doc. # 361], at 1-2.) Moreover, the jury found that DeKalb breached this agreement by not providing the results of the Hawaii field tests in the summer of 1994, and that this breach caused RPA to enter the 1994 Agreement on different terms than it otherwise would have. (*Id.* at 2.) Finally, the jury found that DeKalb fraudulently induced RPA to enter the 1994 Agreement on the terms that it did. The jury awarded RPA $ 15 million for [*17] DeKalb's unjust enrichment, $ 1 in nominal damages, and $ 50 million in punitive damages.

Based upon the assumption that the Court would rescind the 1994 Agreement as a result of this verdict, the Court and the parties moved forward to the second phase of the case, which adjudicated RPA's trade secret misappropriation and patent infringement claims.[7] At a motions hearing on April 26, 1999, the effect of the jury's verdict on the remainder of the case was discussed, several outstanding motions were

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[7] Because of a misunderstanding between the Court and the parties, the parties agreed to move the trade secret misappropriation claim to the second phase. As a result, Monsanto was dismissed from the first phase because Monsanto was not a party to any contract with RPA to provide results from testing the RD-125, and no evidence was adduced that Monsanto was involved in any fraud.

resolved,[8] and various claims and counterclaims were dismissed with prejudice.[9]

[*18] DeKalb's third counterclaim involved an alleged breach by RPA of the 1994 Agreement and its fourth counterclaim involved an alleged breach of the covenant of good faith and fair dealing of the same 1994 Agreement. As the 1994 Agreement will be rescinded, DeKalb's third and fourth Counterclaims are DISMISSED as MOOT. Moreover, RPA's motion to dismiss these counterclaims [Doc. # 275] is DENIED as MOOT; however, this decision does not affect the second part of RPA's Motion to Dismiss [Doc. # 275], which addresses Monsanto's second and third counterclaims.

Most important for the second phase of the trial, RPA voluntarily withdrew a portion of its claims for patent infringement in [*19] Count V of the Supplemental Complaint: Claims 15 and 17 of U.S. Patent 5,633,448 (" '448 patent"). Thus, the only patent claim adjudicated in the second phase of the trial was Claim 11 of the '471 patent. In response to this announcement, both DeKalb and Monsanto conceded that they did not retain any claim of noninfringement as to the '471 patent. Before the second phase of the trial began, the Court ruled that Monsanto was a bona fide purchaser

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[8] At the motions hearing, the parties agreed that the following motions in limine should be DENIED as MOOT: (1) RPA's Motion in Limine to Exclude Certain Testimony regarding Monsanto's Best Mode Defense [Doc. # 365]; (2) Defendants' Joint Motion in Limine to Preclude Testimony by RPA Witness Michael Freeling [Doc. # 383]; and (3) Monsanto's Motion in Limine to Preclude Proffer of Declarations as Evidence Experiments were Performed [Doc. # 385].

[9] RPA withdrew its third claim, for breach of the covenant of good faith and fair dealing of the 1994 Agreement. Thus, Defendants' Motions for Summary Judgment [Docs. # 216 & # 222] are DENIED as MOOT as they pertain to RPA's Count III. DeKalb withdrew its counterclaim for RPA's alleged breach of the 1991 Agreement. Therefore, RPA's motion for summary judgment on this counterclaim [Doc. # 225] is DENIED as MOOT.

from DeKalb of a license for both the OTP, which is the subject of the '471 patent, and the RD-125 construct. As such, Monsanto could not be held liable by RPA for patent infringement based on the '471 patent or for trade secret misappropriation based on the RD-125 construct. Therefore, Claims I and V against Monsanto were dismissed.

Also prior to the second phase of the trial, the Court ruled that DeKalb could not present to the jury a defense that it was licensed to use the OTP and the RD-125 construct under a modification of the 1985/1991 Agreements. The first jury had found that DeKalb breached any such modification by not disclosing the 1994 field test results, and the Court determined that DeKalb's breach necessarily was material to any [*20] modification of those agreements. Therefore, the Court ruled that DeKalb could not rely for its license defense upon the very contracts it had materially breached.

Ultimately, then, four issues were presented to the jury in the second phase of the trial. First, the jury determined that the RD-125 was a trade secret from April 1996 until February 1997, and that DeKalb misappropriated that trade secret by transferring it to Monsanto and by using it in its commercial Roundup Ready corn. Second, the jury determined that Claim 11 of the '471 patent was not obvious; therefore it was enforceable by RPA against DeKalb. Third, the jury—serving in an advisory capacity on DeKalb's inequitable conduct defense—found that a declaration submitted to the Patent and Trademark Office was not fraudulent. Fourth, the jury declined to award punitive damages against DeKalb for its trade secret misappropriation.[10] Moreover, the parties agreed that the Court would determine whether DeKalb's infringement of the '471 patent was willful.

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[10] The parties stipulated to the amount of compensatory damages for which DeKalb was liable for its trade secret misappropriation.

[*21] The case now comes before the Court for resolution of several issues. The Court first will address all of the parties' motions for judgment as a matter of law, as well as explain several rulings of law it made during the course of the trial. Next, the Court will address DeKalb's various motions for a new trial. Finally, the Court will resolve all issues relating to remedies and damages.

III. MOTIONS FOR JUDGMENT AS A MATTER OF LAW

Pursuant to Federal Rule of Civil Procedure 50(b), after each jury verdict, DeKalb renewed its motion for judgment as a matter of law, which it had made at the close of evidence. The text of Federal Rule of Civil Procedure 50(b) states, in part, if, for any reason, the court does not grant a motion for judgment as a matter of law made at the close of all the evidence, the court is considered to have submitted the action to the jury subject to the court's later deciding the legal questions raised by the motion. The movant may renew its request for judgment as a matter of law by filing a motion no later than 10 days after entry of judgment—and may alternatively request a new trial or join a motion for a new trial under Rule 59. In ruling [*22] on a renewed motion, the court may: (1) if a verdict was returned:

(A) allow the judgment to stand,

(B) order a new trial, or

(C) direct entry of judgment as a matter of law . . . .

Fed. R. Civ. P. 50(b). All evidence should be viewed in the light most favorable to the prevailing party, here RPA, and all reasonable inferences should be drawn in its favor. *See Konkel* v. *Bob Evans Farms, Inc.*, 165 F.3d 275, 279 (4th Cir. 1999). DeKalb's Rule 50(b) motion should be denied if, giving RPA the benefit of every legitimate inference in its favor, there was evidence upon which a jury could reasonably return a verdict for RPA. *See Cline* v. *Wal-Mart Stores, Inc.*, 144 F.3d 294, 301 (4th Cir. 1998). In making this de-

termination, the Court is not permitted to retry factual findings or credibility determinations reached by the jury. *See id.* Rather, the Court should assume that testimony in favor of RPA is credible, "unless totally incredible on its face," and ignore the substantive weight of any evidence supporting the moving party. *Id.* (quoting *Duke* v. *Uniroyal, Inc.*, 928 F.2d 1413, 1419 (4th Cir. 1991)).

A Rule 50(b) motion [*23] should be granted only if the Court determines, "without weighing the evidence or considering the credibility of the witnesses, that substantial evidence does not support the jury's findings." *Konkel*, 165 F.3d at 279.

III (A)

The first phase of the trial in this matter involved RPA's claim, under Count IV of its Complaint, for rescission of the 1994 Agreement based upon fraudulent inducement. RPA asserted that DeKalb fraudulently induced it to enter the 1994 Agreement by not disclosing the results of the 1994 field tests. Originally, RPA based its claim for rescission on both constructive and actual fraud. In its summary judgment Memorandum Opinion [Doc. # 327], this Court determined that genuine issues of material fact existed with regard to each theory.

Constructive fraud arises when a party to a confidential or fiduciary relationship breaches a duty that has been implied by law because of the special relationship between the parties. *See Watts* v. *Cumberland County Hosp. Sys., Inc.*, 317 N.C. 110, 115-16, 343 S.E.2d 879, 883-84 (1986). Although RPA initially asserted several bases under which such a relationship could be found, the Court, in [*24] its April 1, 1999 Memorandum Opinion, determined that a genuine issue of material fact existed only as to whether RPA and DeKalb were engaged in a joint venture together. (Mem. Op. [Doc. # 327], at 16.) Thus, at trial, RPA asserted that it was engaged in a joint venture with DeKalb and that DeKalb, by not dis-

closing the field test results, breached a fiduciary duty owed to RPA as a joint venturer. However, before the case was submitted to the jury and for the reasons set forth below,[11] the Court ruled, as a matter of law, that RPA and DeKalb were not engaged in a joint venture. Therefore, the jury was not permitted to consider RPA's constructive fraud claim.[12]

The elements of actual fraud are: (1) a false representation or concealment of a material fact; [*25] (2) that was reasonably calculated to deceive; (3) which was made with the intent to deceive; (4) that did in fact deceive (or reasonably induce reliance); and (5) resulted in injury or damage. *See* 15 N.C. Index 4th, Fraud, Deceit, etc. § 7 (1992); *cf. Myers & Chapman, Inc.* v. *Thomas G. Evans, Inc.*, 323 N.C. 559, 568, 374 S.E.2d 385, 391 (1988).[13] RPA did not assert that DeKalb made any affirmative false statements regarding the field test results. Therefore, in order to satisfy the first element of its fraud claim, RPA was required to prove that DeKalb had a duty to disclose the field test results. *See Setzer* v. *Old Republic Life Ins. Co.*, 257 N.C. 396, 399, 126 S.E.2d 135, 137 (1962) (holding that fraud can be practiced by silence as well as by a positive misrepresentation, if a duty to speak exists). RPA asserted that this duty to disclose arose either from a contractual duty of DeKalb's or from a partial or ambiguous statement made by DeKalb in order to mislead RPA. In its Memorandum in Support of its Motion for Judgment as a Matter of Law [Doc. # 517], DeKalb asserts that RPA failed to satisfy any of the five elements for actual fraud. [*26] (*Id.* at 3-19.)

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[11] *See* discussion *infra* Part III(A)(i).

[12] Nor was the jury instructed that, under an actual fraud claim, a "duty to disclose" may arise if the concealing party has a fiduciary or confidential relationship with the allegedly defrauded party.

[13] Although the Court relied on both North Carolina and Illinois law in its summary judgment opinion, (Mem. Op. [Doc. # 327], at 9), the Court later determined that North Carolina law applies to the fraud claims.

However, for the reasons set forth below, the Court determines that substantial evidence supports the jury's finding that DeKalb, realizing the economic potential of RD-125, fraudulently induced RPA to enter the 1994 Agreement by intentionally concealing information about the efficacy and potential value of RD-125 and taking affirmative steps to create a false impression about the success of RD-125.

Although a breach of contract claim was not specifically pled by RPA, the evidence demonstrated and the jury found that DeKalb breached a contractual duty to keep RPA informed of test results. Therefore, the Court, under Federal Rule of Civil Procedure 15(b), will amend the pleadings to add a claim for breach of contract, in order to conform to the evidence. *See* discussion *infra* [*27] Part III(A)(iii).

III (A) (i)

After the close of RPA's case-in-chief, the Court ruled there was insufficient evidence to support a jury finding that RPA and DeKalb were engaged in a joint venture, and, therefore, the jury was not instructed regarding RPA's constructive fraud claim. Nor was the jury instructed that, under an actual fraud claim, a "duty to disclose" may arise if the concealing party has a fiduciary or confidential relationship with the allegedly defrauded party. This Part of the Memorandum Opinion will explain that decision.

Constructive fraud arises when a party to a confidential or fiduciary relationship breaches a duty that has been implied by law because of the special relationship between the parties. *See Watts,* 317 N.C. at 115-16, 343 S.E.2d at 883-84. When a fiduciary relationship exists, a presumption of fraud is raised when the superior party obtains a possible improper benefit from the relationship. *See id.* In this case, if DeKalb, the transferee of RD-125, stood in a confidential or fiduciary relationship to RPA, the transferor of RD-125, it would be the duty of DeKalb "to exercise the utmost good faith in the transaction" and to disclose [*28] to the transferor all mate-

rial facts relating thereto. *Vail* v. *Vail,* 233 N.C. 109, 114, 63 S.E.2d 202, 206 (1951). Similarly, in a fraudulent omission case, a duty to disclose material information may arise "where a fiduciary relationship exists between the parties to the transaction." *Harton* v. *Harton,* 81 N.C. App. 295, 297, 344 S.E.2d 117, 119 (1986). As a matter of law, a fiduciary relationship exists between members of a joint venture. *See Reese* v. *Melahn,* 53 Ill. 2d 508, 513, 292 N.E.2d 375, 379 (1973).[14]

To determine whether a joint venture existed, the Court first determined the appropriate law to apply. As a federal court applying state law, this Court applied the choice of law rules of the jurisdiction in which it sits. *See Klaxon Co.* v. *Stentor Elec. Mfg. Co.,* 313 U.S. 487, 496, 85 L. Ed. 1477, 61 S. Ct. 1020 (1941). Under North Carolina's choice of law rules, the interpretation [*29] of a contract is governed by the law of the place where the contract was made. *See Tanglewood Land Co.* v. *Byrd,* 299 N.C. 260, 262, 261 S.E.2d 655, 656 (1980). However, if the parties to the contract have agreed that a given jurisdiction's substantive law will govern the interpretation of the contract, then a North Carolina court will give effect to that contractual provision. *See id.*

In its pretrial briefing, RPA asserted that a joint venture was created by DeKalb and RPA under the 1985 and 1991 Agreements. (RPA Answering Br. [Doc. # 246], at 12.) The 1985/1991 Agreements had a choice of law provision that designated Illinois law as the proper law to apply to disputes arising from the Agreements. (Pl.'s Ex. 2, Art. 8.9, at 19.)

In Illinois, a joint venture is

> an association of two or more persons [or entities] to carry out a single enterprise for profit. A formal agreement is not essential to establish a joint venture. Rather, the existence of a joint venture may be

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[14] The reason for using Illinois law is explained *infra.*

> inferred from the facts and circumstances demonstrating that the parties in fact entered into a joint venture. In determining whether a joint venture exists, the intent of the parties [*30] is the most significant element.

O'Brien v. *Cacciatore,* 227 Ill. App. 3d 836, 843, 591 N.E.2d 1384, 1388-89, 169 Ill. Dec. 506, 510-11 (1992) (citations omitted). The following elements must be present for a joint venture to exist: (1) an agreement, either express or implied, to carry on a single enterprise with a legitimate purpose; (2) a community of interest in the purpose; (3) expectation of profits; (4) duty to share profits and losses; and (5) the right of each person to direct and govern the conduct of the other members of the venture. *See Pinkowski* v. *Coglay,* 347 F.2d 411, 413 (7th Cir. 1965); O'Brien, 227 Ill. App. 3d at 843, 591 N.E.2d at 1389, 169 Ill. Dec. at 511. The burden of proving that a joint venture exists is on the party claiming that such a relationship exists, and whether or not a joint venture exists typically is a question of fact for the trier of fact. *See O'Brien,* 227 Ill. App. 3d at 843, 591 N.E.2d at 1389, 169 Ill. Dec. at 511. However, in this case, RPA did not present sufficient evidence of an essential element, i.e., dual control over the relationship. "Possibly, the most important [*31] criterion of a joint venture is joint control and management of the property used in accomplishing its aims." *Herst* v. *Chark,* 219 Ill. App. 3d 690, 694, 579 N.E.2d 990, 992, 162 Ill. Dec. 176, 178 (1991). "The legal requirement of a right to management or control has been interpreted as requiring some right by the parties to direct and govern the conduct of each other in connection with the joint venture." *Id.* at 696, 579 N.E.2d at 994, 162 Ill. Dec. at 180.

The evidence presented at trial did not support the view that RPA and DeKalb were able to "direct and govern" each other's conduct. Rather, each party completed its work for the project independently. Indeed, the relationship between the parties developed because each party perceived the other

as having the ability to complete different aspects of the research necessary to produce glyphosate tolerant corn. (Apr. 7, 1999 Tr. [Doc. # 483], at 136.) RPA was an expert in genetic research and in creating various genetic constructs, while DeKalb's expertise involved taking a genetic construct and "transforming" it into corn. (Apr. 12, 1999 Tr. [Doc. # 486], at 213-14; Apr. 13, 1999 Tr. [Doc. # [*32] 487], at 20-21.) Each company needed the other to complete its own part of the project in order for the overall project to be successful. No evidence was presented of any DeKalb employee directing RPA on how to complete its genetic research and development. Nor was any evidence presented of RPA directing DeKalb's efforts to transform corn and to grow corn from seeds generated through the transformation process. In fact, the creator of RD-125, Dr. Rick DeRose of RPA, testified that he could not provide support for DeKalb's experiments with RD-125 after he gave the construct to DeKalb, because RPA was

> responsible for making these constructs, and DeKalb was responsible for actually getting these constructs into corn. So unless they needed information on how these constructs were made or how to test these constructs to see if they're working, we didn't have any more real input into what was going on.

(Apr. 8, 1999 Tr. [Doc. # 484], at 54.) Dr. DeRose had never even witnessed transformed corn until he visited DeKalb's laboratory in Mystic, Connecticut in August 1993. (*Id.* at 62-63.)

Of course, the companies did participate in "Project Review Committee" meetings, [*33] pursuant to the 1985/1991 Agreements. This Committee, according to the 1985/1991 Agreements, consisted of three members from each company and had "general oversight responsibility for the progress of each party." (1985 Agreement, Pl.'s Ex. 2, P 6.1, 6.2.) Periodically, the Committee met to "report to each party . . . on

all results achieved in their respective work . . . [and to] coordinate interaction of activities and results from work to achieve Benchmark objectives of developing Products in the most expeditious fashion." (*Id.* at P 6.3.) The then-President of Calgene, Roger Salquist, testified that the project was a "jointly-managed project" through the Project Review Committee prior to 1991. (Apr. 7, 1999 Tr. [Doc. # 483], at 135.)

However, the Committee's relevance to this analysis is minimal because in November 1992, RPA gave DeKalb official notice that it was ending its participation in the glyphosate resistance project and in the Project Review Committee meetings, and there was no evidence that the parties ever discussed or even contemplated another meeting.[15] From that point forward, any semblance of the "joint management" to which Mr. Salquist testified was non-existent. [*34] While the companies did communicate after RD-125 was transferred, typically these communiques were not examples of "joint control"; rather the letters were merely the exchange of potentially useful information. The evidence was unequivocal that, even if the Project Review Committee provided some element of "joint control" over the glyphosate resistance collaboration prior to 1992, once the RD-125 was transferred to DeKalb, RPA had almost no input into DeKalb's work with the construct, the Project Review Committee never met again, nor was ever scheduled to meet again. Therefore, at least after RPA withdrew from the Project Review Committee meetings—and the collaboration generally—no joint venture between the companies existed. *See Electrical Contractors, Inc.* v. *Goldberg & O'Brien Electric Co.*, 29 Ill. App. 3d 819, 823, 331 N.E.2d 238, 242 (1975) ("Where the right to control is lacking, a joint enterprise does not exist." (quoting *Bainbrich* v. *Wells*, 28 Colo. App. 432, 476 P.2d 53, 54 (1970) (internal quotation marks omitted))).

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[15] Dr. Freyssinet testified that RPA was merely "suspending" its involvement in the project.

[*35] **III (A) (ii)**

In the Memorandum in Support of its Motion for Judgment as a Matter of Law [Doc. # 517], DeKalb asserts that RPA failed to satisfy any of the five elements for actual fraud. (*Id.* at 3-19.) Viewed in the light most favorable to the prevailing party—here, the plaintiff—the evidence tended to show the following:

In November 1992, at the last project review meeting between the parties, DeKalb requested that RPA permit it to experiment with the non-Comai, double mutant maize EPSPS gene, which had been developed by Dr. Rick DeRose of RPA and which was showing some early promise in the lab for conferring glyphosate resistance. In return, DeKalb, which had the technology to transform corn plants with this genetic material, promised to keep RPA, which did not have that technology, informed about the progress of its experiments.

Dr. DeRose combined the double mutant gene with an "Optimized Transit Peptide" developed by RPA, named the combination RD-125, and sent the construct to DeKalb. Throughout 1993, Dr. DeRose kept in contact with the scientists from DeKalb, including Michael Spencer and Dr. Flick. (Apr. 8, 1999 Tr. [Doc. # 484], at 54-66.) The two companies [*36] exchanged information periodically and Dr. DeRose visited DeKalb's facility in Mystic, Connecticut in August 1993. (Apr. 8, 1999 Tr. [Doc. # 484], at 60.) Moreover, in 1993 and 1994, a pattern developed whereby DeKalb updated RPA about information it had gathered from various phases of testing the construct, (Pl.'s Ex. 211, 241), and asked for RPA's permission to use the construct for other purposes, (Pl.'s Ex. 245, 262). Consistent with its promise to keep RPA informed of test results, DeKalb timely provided a complete copy of a February 1994 report discussing laboratory testing in which plants grown from individual cells transformed with RD-125 had survived an application of glyphosate four times stronger than a normal commercial ap-

plication. The cover letter accompanying the report characterized the results as "encouraging" and the material referred to upcoming field trials during the summer of 1994.

Researchers in this area understood that success in the laboratory seldom meant success when an experiment was carried into the field. In fact, there had never been successful field testing for resistance to commercial application levels of glyphosate in corn plants grown from seeds. [*37]

On September 6, 1994, Chris Flick learned of the successful Hawaii field tests. He understood that this was the first time corn grown from seeds and planted outdoors had withstood application of four times commercial levels of glyphosate and he understood this was one of the biggest happenings in the nine-year history of the project. The following day, September 7, 1994, Flick wrote to Dr. Freyssinet about RD-125 but mentioned nothing about the Hawaii testing. Instead, using the same adjective phrase employed when forwarding the descriptions of the February lab tests, he simply stated that since DeKalb had obtained "very encouraging" results in maize with the double mutant maize gene it would like permission to also use the gene in soybeans as a selectable marker. (Pl.'s Ex. 310)

That same day, September 7th, DeKalb lawyer Doug Fisher, who also was aware of the Hawaii field test results, wrote his RPA counterpart and encouraged a hastened agreement between DeKalb and RPA in preparation for the settlement with Monsanto regarding Monsanto's alleged infringement of the Comai patents. It had been understood that part of the agreement between DeKalb and RPA would relate to RPA granting [*38] certain rights and/or licenses to DeKalb regarding the use of Comai gene constructs. Afterward, Fisher and Flick, in putting together the list of genetic materials to be licensed, included RD-125, a non-Comai construct, when neither of them nor anyone else from DeKalb had informed RPA about the Hawaii tests.

When, during discovery, RPA requested Fisher's notes made contemporaneously with these matters, it was learned they had been destroyed.

When, during his video deposition, Dr. Flick was asked why he had not informed Dr. Freyssinet in the September 7th letter about the Hawaii field trials, he responded that to do so would have required that he write a longer letter. When asked why he could not have written a longer letter, he paused, considered the question, and eventually replied that he really could not think of a reason.

In fact, DeKalb never informed RPA directly about the field success of RD-125. RPA's first indication that DeKalb had achieved positive results beyond the initial lab tests reported in February 1994 was in December 1996. (Def.'s Ex. 82 (Michael Spencer e-mail to Rick DeRose)). Yet, it was not until the Fall of 1997, when Dr. DeRose saw DeKalb's APHIS application [*39] for sale of a commercial product, that RPA became aware of DeKalb's commercialization of that material. (Apr. 8, 1999 Tr. [Doc. # 484], at 80 (DeRose Test.).)

In addition to the historical facts, the jury was entitled to consider the demeanor of the DeKalb witnesses and their explanation of those historical facts. While it may have been the result of illness or the natural apprehension of a person not accustomed to being video-deposed or, perhaps, some other perfectly innocent reason, Dr. Flick's answers and, especially, his manner of answering questions—hesitation of response and rapid eye movements back and forth—most reasonably could have been interpreted as indicative of deception. Dr. Mackey's assertion to the effect that she was ecstatic about the February 1994 RD-125 lab results, but not even excited about the Hawaii field trial results, permissibly could have been received with skepticism as could her testimony that, at the end of 1994, RPA knew as much about the efficacy of RD-125 transformed corn as did DeKalb.

In sum, the evidence warranted findings that: DeKalb had promised to keep RPA informed of test results and knew RPA was relying on it to do so, especially [*40] since the full results of the successful lab tests had been provided; that immediately after learning of the Hawaii results Dr Flick wrote the "soybean" letter—using the same word "encouraging" as had been used in the February lab report cover letter—for the purpose of lulling RPA into believing DeKalb was maintaining open communications and that there had been no further positive results so that DeKalb could gain full rights to RD-125 and a huge advantage over other potential competitors.

Again, the elements of actual fraud are: (1) a false representation or concealment of a material fact; (2) that was reasonably calculated to deceive; (3) which was made with the intent to deceive; (4) that did in fact deceive (or reasonably induce reliance); and (5) resulted in injury or damage.

The materiality of the field test results cannot be seriously contested. The test results provided significant evidence that a substantial hurdle to glyphosate resistance had been cleared. For the first time, corn plants grown from seed in the field had demonstrated significant levels of glyphosate resistance. Scientific experts testified that the field results were more meaningful than the greenhouse [*41] studies because they more closely approximated real-life conditions. Several RPA witnesses testified that they would not have recommended entering the 1994 Agreement had they known of the results. Moreover, the fact that, after DeKalb received the results, it immediately began backcrossing the GA21 lines in order to begin the commercialization process supports the conclusion that the test results were material.

In addition to materiality, in order to satisfy the first element of its fraud claim, RPA was required to prove that DeKalb had a duty to disclose the field test results. *See Setzer* v. *Old Republic Life Ins. Co.*, 257 N.C. 396, 399, 126 S.E.2d 135, 137 (1962) (holding that fraud can be practiced by si-

lence as well as by a positive misrepresentation, if a duty to speak exists). As this Court has noted, "in fraudulent omission cases the obligation imposed on parties is not always . . . easy to ascertain because the scope of the duty to disclose can vary between different situations and jurisdictions." *Breeden* v. *Richmond Community College*, 171 F.R.D. 189, 194 n.4 (M.D.N.C. 1997). In North Carolina, a legal duty to disclose material information [*42] can arise "from a relation of trust, from confidence, inequality of condition and knowledge, or other attendant circumstances." *Setzer*, 257 N.C. at 399, 126 S.E.2d at 137 (quoting 23 Am. Jur., Fraud & Deceit, § 77). Although there is no fiduciary relationship in the instant case, (*See* discussion *supra* Part III(A)(i); Mem. Op. [Doc. # 327], at 9-18), there are other "attendant circumstances" that support the jury's conclusion that DeKalb had a duty to disclose the field test results to RPA.

DeKalb had promised disclosure in order to obtain permission to conduct research with the double mutant maize gene and knew that RPA had reason to expect that, because of that promise, it would be fully informed of significant test results. It is in the context of that relationship and that expectation that Dr. Flick's September 7, 1994 fax to Dr. Freyssinet must be examined with regard to its timing—one day after receiving word of the Hawaii tests, its wording—referring to the double mutant maize gene only in the same general terms used after the February lab tests, and, most notably, its lack of any mention of the Hawaii tests—which Dr. Flick himself described [*43] (Tr. April 13, 1999, p. 14) as one of the most significant occurrences in DeKalb's glyphosate resistance project, a project which at that time was at least nine years old. In this context, Dr. Flick's letter reasonably could be considered a "partial or ambiguous" statement that imposed upon DeKalb a duty to disclose the field test results.[16]

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[16] The Restatement (Second) of Torts provides in pertinent part that:

Such a duty would arise from a common-law duty to correct misleading statements.[17] *See Ragsdale* v. *Kennedy*, 286 N.C. 130, 139, 209 S.E.2d 494, 501 (1974) ("Even though a vendor may have no duty to speak under the circumstances, nevertheless if he does assume to speak he must make a full and fair disclosure as to the matters he discusses."); *Shaver* v. *N.C. Monroe Constr. Co.*, 63 N.C. App. 605, 614-15, 306 S.E.2d 519, 525 (1983) (holding that, after a letter to employees impliedly represented that contributions were being made to a pension plan and after an employee was told that the plan was still "intact," the employer could have a duty to disclose the full truth that the plan had been terminated). [*44]

> (1) One who fails to disclose to another a fact that he knows may justifiably induce the other to act or refrain from acting in a business transaction is subject to the same liability to the other as though he had represented the nonexistence of the matter that he has failed to disclose, if, but only if, he is under a duty to the other to exercise reasonable care to disclose the matter in question. (2) One party to a business transaction is under a duty to exercise reasonable care to disclose to the other before the transaction is consummated, ...(b) matters known to him that he knows to be necessary to prevent his partial or ambiguous statement of the facts from being misleading; and...(e) facts basic to the transaction, if he knows that the other is about to enter into it under a mistake as to them, and that the other, because of the relationship between them, the customs of the trade or other objective circumstances, would reasonably expect a disclosure of those facts.

Restatement (Second) of Torts § 551 (1977).

[17] Other instances in which a legal duty to disclose may arise are: (1) where a fiduciary relationship exists between the parties to the transaction; and, outside of a fiduciary relationship in which the parties are dealing at arm's length, (2) where a party has taken affirmative steps to conceal material facts from the other and (3) where one party has knowledge of a latent defect in the subject matter of the negotiations about which the other party is both ignorant and unable to discover through reasonable diligence. *See Harton* v. *Harton*, 81 N.C. App. 295, 297-98, 344 S.E.2d 117, 119 (1986).

Similar and in addition to the rule involving a partial or ambiguous statement, a duty to disclose arises when a party has taken affirmative steps to conceal material facts. *See Harton* v. *Harton,* 81 N.C. App. 295, 297-98, 344 S.E.2d 117, 119 (1985). As one authority provides:

> It is a basic principle in the law of fraud in respect of the effect of nondisclosure that the proposition that in the absence of a duty to speak, nondisclosure is not fraudulent, presupposes [*45] mere silence, and is not applicable where, by words or conduct, a false representation is intimated or any deceit practiced. Moreover, the rule that fraud cannot be predicated on a failure to disclose facts where the information is as accessible to one party as to the other, and where the truth may be ascertained by the exercise of reasonable diligence, does not justify a resort to active deceit or fraud, and hence does not apply where a party, in addition to nondisclosure, uses any artifice to throw the other party off his guard and to lull him into a false security. Therefore, each party to a contract must take care not to say or do anything tending to impose upon the other.
>
> Concealment becomes a fraud where it is effected by misleading and deceptive talk, acts, or conduct, where it is accompanied by misrepresentations, or where, in addition to a party's silence there is any statement, word, or act on his part which tends affirmatively to a suppression of the truth, to a covering up or disguising of the truth, or to a withdrawal or distraction of a party's attention from the real facts; then the line is overstepped, and the concealment becomes a fraud. Such conduct is designated [*46] "active concealment," and it produces the same result in law as positive misrepresentation. Likewise, resort to any trick or artifice to prevent an adversary from discovering the truth is equivalent to active misrepresentation.

37 Am. Jur. 2d Fraud and Deceit § 174(C) (1968).

The September 7 fax cannot be isolated from the rest of the circumstances and read independently to determine whether it was misleading or ambiguous. When placed in the context of the entire course of dealings between DeKalb and RPA and the reasonable expectations of RPA, the fax would be understood to say: "As you know, we've had some success in the lab with the double mutant gene in corn and would also like to use it in the lab as a selectable marker in soybeans, and, by the way, as you can see, we are staying in touch regarding what is going on with the gene." A reasonable jury could conclude that RPA was "deprived [of the truth] to the same extent that [it] would have been by positive assertion." *Id.* And, even more, the jury could conclude that the letter actually was written for the deceptive purpose of lulling RPA into believing that success had not passed beyond the laboratory and that [*47] DeKalb was maintaining full and open communications about RD-125.

Finally, RPA was in fact deceived about the worth of RD-125, as evidenced by RPA's agreement to include it in the 1994 Agreement for, arguably, no consideration other than that already bargained for pertaining to the unsuccessful Comai gene. That this deception caused significant economic injury to RPA cannot be disputed given the value in the market of the first commercially feasible, glyphosate resistant corn seed. (Apr. 13, 1999 Tr. [Doc. # 487] at 191-92 (Bokhart Test.).)

The evidence, viewed in the light most favorable to RPA, demonstrated that substantial evidence existed to support the jury's verdict regarding RPA's fraudulent inducement claim against DeKalb. Therefore, DeKalb's Motion for Judgment as a Matter of Law on this claim is DENIED.

III (A) (iii)

In the complaint RPA asserted DeKalb's breach of the agreement to keep it advised of testing results, not as an in-

dependent claim for breach of contract, but as it related to recission of the 1994 settlement agreement. The issues of whether there had been such an agreement as the condition for transfer of the double mutant maize gene and whether there had [*48] been a breach of that agreement were specifically tried—addressed in pre-trial motions, briefs, and argument, in opening statements at trial, by evidence, in closing arguments, by instructions to the jury, and by jury findings. Under Rule 15(b), the Court amends the pleadings in this matter to include a claim by RPA against DeKalb for breach of contract. The pleadings will then conform to the evidence as well as to the jury's verdict, which determined that DeKalb materially breached a contractual duty to RPA by disclosing the results of the field tests.

Federal Rule of Civil Procedure 15(b) provides:

> (b) Amendments to Conform to the Evidence. When issues not raised by the pleadings are tried by express or implied consent of the parties, they shall be treated in all respects as if they had been raised in the pleadings. Such amendment of the pleadings as may be necessary to cause them to conform to the evidence and to raise these issues may be made upon motion of any party at any time, even after judgment; but failure so to amend does not affect the result of the trial of these issues. If evidence is objected to at the trial on the ground that it is not within the issues [*49] made by the pleadings, the court may allow the pleadings to be amended and shall do so freely when the presentation of the merits of the action will be subserved thereby and the objecting party fails to satisfy the court that the admission of such evidence would prejudice the party in maintaining the party's action or defense upon the merits. The court may grant a continuance to enable the objecting party to meet such evidence.

An amendment to conform to evidence may be made at any time, so long as the opposing party has not been prejudiced in presenting his case. *See* 3 J. Moore, Federal Practice P 15.13[2], at 15-157 to 15-168 (2d ed. 1984) (cited in *Brandon* v. *Holt*, 469 U.S. 464, 471 n. 19, 83 L. Ed. 2d 878, 105 S. Ct. 873 (1985)). The Rule is "intended to promote the objective of deciding cases on their merits rather than in terms of the relative pleading skills of counsel," and therefore it should be interpreted liberally. 6 C. Wright & A. Miller, Federal Practice and Procedure § 1491, pp. 453, 454 (1971 ed. and Supp.1983) (cited in *Brandon*, 469 U.S. at 471 n.19). Finally, the Rule is

> designed to allow amendment of [*50] a pleading when the facts proven at trial differ from those alleged in the complaint, and thus support a cause of action that the claimant did not plead. Because notice to the defendant of the allegations to be proven is essential to sustaining a cause of action, Rule 15(b) applies only when the defendant has consented to trial of the non-pled factual issues and will not be prejudiced by amendment of the pleadings to include them.

Gilbane Building Co. v. *Federal Reserve Bank of Richmond*, 80 F.3d 895, 901 (4th Cir. 1996).

From the beginning of the trial,[18] the Court assumed that the first trial would cover two claims that the Defendants had a duty to disclose the field trial results: one duty under a fraud context and one contractual duty. In discussing a proposed statement to potential jurors on the first day the parties gathered to discuss pretrial motions before the first trial, the Court stated that it was concerned about the Defendants' pro-

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[18] Admittedly, in its summary judgment Memorandum Opinion, the Court fell into the same trap as RPA by discussing the contractual duty to disclose as a means to satisfy the first element of the fraud claim. (Mem. Op. [Doc. # 327], at 21-22.)

proposal because "it mentions only the fraud claim and there are contract claims involved." (Apr. 5, 1999 Tr. [Doc. # 481], at 4.) The Court then mentioned to the potential jurors that part of the jury's job in the [*51] case would be to determine "exactly what [the] understanding was by which Rhone-Poulenc gave [the gene] to DeKalb . . . ." (*Id.* at 19; *see also id.* at 21.) DeKalb acknowledged the contract issues before trial as well. When discussing the appropriate law to apply to the various claims, counsel for DeKalb stated that the "central allegation on which RPA seeks to rescind the 1994 agreement is the claim that DeKalb had duties under the 1991 agreement, contractual duties and fiduciary duties." (*Id.* at 95-96; *see also id.* at 96 ("What the obligations were, fiduciary or contractual, is going to be the core issue in [RPA's] rescission count."); *id.* at 97 ("We think that Illinois law should also control the issue of whether—what the parties' duties were under that contract.").) Moreover, one of the Defendants' motions in limine being discussed at that hearing involved the Defendants' attempt to exclude evidence relating to RPA's claim that DeKalb breached either the 1991 Agreement or separate oral agreement, which the Court denied. (Joint Mot. [Doc. # 295]; Apr. 5, 1999 Tr. [Doc. # 481], at 188-93.) Importantly, this motion did not involve any claim that RPA [*52] never asserted a breach of contract claim in its Complaint; rather it involved the Defendants' assertion that RPA had not provided sufficient evidence regarding the claim.

Therefore, all of the parties entered the trial knowing that the pivotal issues were whether DeKalb had agreed to disclose test results in return for receiving non-Comai genetic materials including RD-125 and, if so, whether that agreement was breached. DeKalb offered evidence on each issue, and argued to the jury that if there were an agreement to disclose, it had been fulfilled. (Apr. 7, 1999 Tr. [Doc. # 483], at 9, 10, 17-20, 54, 60; Apr. 9, 1999 Tr. [Doc. # 485], passim; Apr. 10, 1999 Tr. [Doc. # 486], passim; Apr. 19, 1999 Tr. [Doc. # 491], at 193; Apr. 20, 1999 Tr. [Doc. # 492], [*53]

at 42-43, 108, 116, 128; DeKalb's Proposed Jury Instructions [Doc. # 357], at 17.) The jury was presented specific questions regarding whether there had been an agreement and, if so, whether it had been breached. (Issue Sheet [Doc. # 361], at 1-2.) Substantial evidence supported a jury finding that DeKalb breached a contractual duty to disclose the field test results. Under Rule 15(b), the Court will allow the pleadings to be amended, because RPA's breach of contract claims were presented and tried as separate claims from RPA's fraud claim, with the consent of both parties.

III (A) (iv)

Given the jury's finding that DeKalb fraudulently induced RPA to enter the 1994 Agreement by not disclosing the results of the field tests, the Court will ORDER that the 1994 Agreement be RESCINDED. Therefore, the parties are returned to their respective positions prior to the signing of the 1994 Agreement.

III (B)

The next issue is whether DeKalb should have been allowed to argue to the second jury that it had a license to the OTP and to RD-125, even though the 1994 Agreement was rescinded by the first jury's finding of fraud and all relevant evidence pertaining to the transfer of RD-125 had [*54] been presented to the first jury. After the jury verdict in the first trial (fraud), and during pretrial discussions just prior to beginning the second trial (patent infringement and trade secret misappropriation), DeKalb asserted that if the 1994 Agreement were rescinded, it had a license to commercialize both the OTP and RD-125 under the 1985/1991 Agreements, as modified by the parties through their conduct. DeKalb based this assertion on the first jury's finding that the agreement by which the RD-125 was transferred was formed through, among other things, "the conduct of the parties as a modification of the 1985/1991 written agreements." (Issue Sheet [Doc. # 361], at 2 (Question 1(C)).) Therefore, DeKalb ar-

gued, it had a defense to both the trade secret misappropriation and the patent infringement claims in the second phase of the trial. At the very least, according to DeKalb, whether the parties modified the 1985/1991 Agreements to include commercialization rights and royalty obligations to RD-125 was a question of fact for the second jury to consider.[19] [*55]

III (B) (i)

DeKalb's argument misconstrues, among other things, the procedural history of the bifurcation order that was issued—upon DeKalb's motion and against the wishes of RPA—prior to the start of trial. Pursuant to that order, any issue regarding DeKalb's potential licenses to this technology should have been adjudicated during the first trial. On February 16, 1999, this Court granted a joint motion from DeKalb and Monsanto to "bifurcate RPA's contract and licensing claims from RPA's remaining claims." (Mem. Supp. Joint Mot. Bifurcate [Doc. # 149], at 12.) The intent and logic of the bifurcation order was clear: in order to avoid the complicated issues of patent law and to promote judicial economy, a jury first would determine whether the Defendants had a license to the technology and, if so, the scope of that license. If the Defendants prevailed in the first phase or trial, a second would be unnecessary, since a license would be a complete defense to the remaining claims. A second jury would determine the rest of the claims only if RPA prevailed before the first.

It was the clear understanding of the parties—and the entire point of bifurcating the trial—that [*56] all aspects of the contractual relationships among RPA, DeKalb, and Monsanto would be adjudicated during the first trial. As the Defendants pointed out then, "only if RPA succeeds in its effort

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[19] The Court ruled separately that the 1985/1991 Agreements, on their face, did not include rights to the RD-125 construct. (Apr. 19, 1999 Tr. [Doc. # 491], at 199.) Therefore, DeKalb must claim that license rights are granted by a modification of the parties to these agreements.

to overturn defendants' licenses will the Court have to address the other aspects of RPA's claims, including its patent claims, defendants' patent defenses, and damages." (Mem. Supp. Joint Mot. Bifurcate [Doc. # 149], at 3.) DeKalb stated that the first phase would "focus on the negotiation of the relevant contracts and the parties' courses of dealing under them." (Mem. Supp. Joint Mot. to Bifurcate [Doc. # 149], at 3; *see also* Def.'s Reply Mem. [Doc. # 174], at 3.; Feb. 16, 1999 Tr. [Doc. # 259], at 46 ("The Court and the jury needs [sic] to resolve these contract relationship issues between DeKalb Calgene, DeKalb RPA, and the settlement in 1994 of the first lawsuit that RPA brought against Monsanto before you get to any patent issues.").) Moreover, DeKalb's motion to bifurcate was made with full knowledge that part of its "contract and license" claim would require a determination of whether DeKalb had a commercial license under a modified version of the 1985/1991 Agreements, [*57] should the 1994 Agreement be rescinded. (Mem. Supp. Joint Mot. to Bifurcate [Doc. # 149], at n.2; Def.'s Reply Mem. [Doc. # 174], at 4 (stating that the dispute in first phase "centers on DeKalb's rights to the [technology] under both the 1994 Agreement and earlier agreements"); Feb. 16, 1999 Tr. [Doc. # 259], at 44-46.) RPA also was clear in its assertion that if the 1994 Agreement were rescinded, it believed that DeKalb would not have any rights to the disputed technology. (Feb. 16, 1999 Tr. [Doc. # 259], at 20, 26; Apr. 14, 1999 Tr. [Doc. # 488], at 119.) Therefore, without a doubt, DeKalb understood that by bifurcating the trial, all of the licensing issues were to be resolved in the first phase of the trial. (Def.'s Reply Mem. [Doc. # 174], at 6 ("Of course, if defendants prevail on the licensing issue, there will be no need to try the patent issues at all."); Feb. 16, 1999 Tr. [Doc. # 259], at 52 ("If it is determined . . . in the contract case that Monsanto and DeKalb are licensed, you really don't have to deal with these [patent issues]. The issues only arise if it is determined that we are not licensed.").) The determination of the contractual arrangement [*58] by which the technology was transferred was the

entire purpose of the first phase or trial, which DeKalb itself repeatedly made clear in its arguments to the Court.

Now, however, DeKalb attempts to avoid the consequences of its own success in bifurcating the trial. DeKalb asserts that because the Court allowed the trade secret misappropriation claim to be moved from the first to the second trial. DeKalb "had no obligation to establish their licensing defense in the first trial." (DeKalb's Br. Opp. to RPA's Mot. Entry of J. [Doc. # 402], at 2.) According to DeKalb, it would be "nonsense" and "preposterous" for DeKalb to be required "to present a license defense in response to RPA's claim for fraudulent inducement which was the sole claim at issue in the first trial." (DeKalb's Br. Opp. to RPA's Mot. Entry of J. [Doc. # 402], at 2, 4.) The contrary is true, however; it would have constituted a compelling defense to the fraud claim. A jury determining that DeKalb had acquired a license to commercialize RD-125 through the 1985/1991 Agreements would find it difficult (1) to conclude that DeKalb had a motive to defraud RPA about something to which it already had obtained commercialization [*59] rights and (2) to conclude that RPA could establish the required element of injurious reliance since RPA could not have been fraudulently deprived of a construct by a party, to whom it had already given commercialization rights.

Further, the postponement of the trade secret misappropriation claim to the second phase of the trial did nothing to alter the structure of the two trials. From the very beginning of the first phase, the parties understood that contract and fraud claims would be adjudicated. *See* discussion *supra* Part III(A)(iii). Indeed, trade secret misappropriation instructions were not even included in the jury's preliminary instructions, because the Court understood RPA to state that the misappropriation claim was subsumed by the fraud claim. (Apr. 5, 1999 Tr. [Doc. # 481], at 264-65; Apr. 14, 1999 Tr. [Doc. # 488], at 117-18.) Moreover, during the discussion of whether the misappropriation claim should be postponed, DeKalb af-

firmed that, if RPA prevailed on either the contract or fraud issues against DeKalb, "that would take care of any question of trade secret appropriation with regard to DeKalb." (Apr. 14, 1999 Tr. [Doc. # 488], at 118.) Furthermore, [*60] no objection was raised by DeKalb when the decision to postpone the misappropriation claim was discussed, nor in response to RPA's statement that:

> Your Honor, we are all agreed, I think, both sides of the aisle and Your Honor that the key is the contract. On behalf of RPA we would not mind pushing off the entire trade secret issue to the patent case and let the jury here decide the contract case. The contract case, as your Honor has ruled in your prior order, will determine whether Monsanto and DeKalb have rights. If they have the rights that ends the case. If they do not have the rights, I think Your Honor indicated the judgment can be against DeKalb in this action.

(Apr. 14, 1999 Tr. [Doc. # 488], at 119-25.)

Finally, DeKalb states that, in the first phase of the trial, it was prevented from presenting evidence in defense of its trade secret claim after that claim was postponed. (DeKalb's Br. Opp. RPA's Mot. Entry J. [Doc. # 402], at 3.) Again, DeKalb misconstrues the record. DeKalb was prevented from presenting evidence relating to whether and when the technology was a trade secret—not whether DeKalb had a license to it under either the 1994 Agreement or [*61] a modification of the 1985/1991 Agreements. (Apr. 19, 1999 Tr. [Doc. # 491], at 168.)

In sum, the postponement of the misappropriation claim did not relieve DeKalb of its obligation to demonstrate that it acquired the technology properly, through either the 1994 Agreement or a modification of the 1985/1991 Agreements. As recognized throughout the trial, by both parties and the Court, the first trial would determine each of the parties' rights regarding the technology. Therefore, the second would

be necessary only if it was determined that DeKalb had no commercialization rights to the technology. The argument that DeKalb now presents, if accepted, would give DeKalb two opportunities to argue before different juries whether—from the same evidence—there had been an agreement and, if so, what its terms had been. Such a result would nullify the effect of DeKalb's own bifurcation motion by repeating the production in the second trial of substantially the same evidence that was submitted in the first phase and, also, giving DeKalb the opportunity to argue as it did in the first that there had been no agreement and, upon losing that, to argue before the second what the nature of the [*62] agreement had been. Such a result would, then, allow DeKalb not only to relitigate the contract issue, but to do so the second time before a jury which had heard nothing of misrepresentations nor seen witness demeanor which could affect credibility determinations.

Since DeKalb substantively bases its argument that it had commercialization rights upon the first jury's finding that the agreement for the transfer of RD-125 was a "modification of the 1985/1991 Agreements", the Court will examine the evidence presented to determine whether it was sufficient to support a finding that DeKalb obtained a license to commercialize RD-125 under the 1985/1991 Agreements.

III (B) (ii)

Contract modification must satisfy all the requirements of a valid contract, including the requirement of consideration. *See Bass* v. *Prime Cable of Chicago, Inc.*, 284 Ill. App. 3d 116, 126, 674 N.E.2d 43, 51, 220 Ill. Dec. 772, 780 (1996). "A modification of a contract may be ratified by acquiescence in a course of conduct consistent with the existence of that modification." *Corrugated Metals, Inc.* v. *Industrial Comm'n*, 184 Ill. App. 3d 549, 556, 132 Ill. Dec. 739, 744, 540 N.E.2d 479, 484 (1989). [*63]

DeKalb has the burden of proving that a modification occurred. *See Boardman* v. *Bubert,* 325 Ill. 38, 41, 155 N.E. 784, 786 (1927). Whether a contract has been modified is ordinarily question of fact; however, the sufficiency of facts presented to constitute a modification is a question of law. *See Martz* v. *MacMurray College,* 255 Ill. App. 3d 749, 753, 627 N.E.2d 1133, 1135, 194 Ill. Dec. 491, 493 (1993). Moreover, if after consideration of all evidence, the court determines that reasonable people could reach only one conclusion, the modification issue can be decided by the court as a matter of law. *See E.A. Cox Co.* v. *Road Savers Int'l Corp.,* 271 Ill. App. 3d 144, 152, 648 N.E.2d 271, 277-78, 207 Ill. Dec. 815, 821-22 (1995).

The 1985 Agreement contains a clause declaring that it "may be amended only by a writing signed by both parties." (Pl.'s Ex. 2, Art. 8.3, at 17.) However, DeKalb is not precluded by Article 8.3 from claiming that the Agreement was modified by the conduct of the parties because, in Illinois,[20] "the terms of a written contract can be modified by a subsequent oral agreement even though . . . the contract precludes [*64] oral modifications." *Tadros* v. *Kuzmak,* 277 Ill. App. 3d 301, 312, 660 N.E.2d 162, 170, 213 Ill. Dec. 905, 913 (1995).

The 1985 Agreement recognized that Calgene (and RPA) would engage in future development and that neither party would be bound to a license agreement for future technology based on the 1985 Agreement. In Article 8.1, Calgene (and then RPA) agreed to notify DeKalb of any future development which "may have practical application to the transformation, regulation or expression of useful genes in corn . . . for the sole purpose of permitting [DeKalb] to indicate an

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[20] The law of Illinois will be used to determine the requirements for a modification of the 1985/1991 Agreements because those agreements contain a choice of law clause designating Illinois law. (Pl.'s Ex. 2, Art. 8.9, at 19.)

interest in acquiring such developments by license or otherwise." (Pl.'s Ex. 2, Art. 8.1, at 16.) Moreover, in the first meeting between DeKalb and RPA after the 1991 Agreement, the final version [*65] of the minutes noted that

> there was some discussion regarding the regulatory environment for transgenic plants and also potential legal entanglements regarding technology for which patents might issue in the future. Since it is highly unlikely that our first transformants will lead to commercialization, we decided to let scientific issues drive our decisions rather than patent and regulatory issues. Thus, our primary objective is to test expression of aroA (CT7) in maize plants using the best technology available.

(Pl.'s Ex. 43, Minutes, June 17, 1991 Rhone Poulenc/DEKALB Plant Genetics Meeting, at DKB 040792.) The parties protected themselves from this decision to postpone determination of rights to technology other than the CT-7 by also agreeing that all materials exchanged between the parties would be covered by the 1984 Confidentiality Agreement. (*Id.* at DKB 040790.) The only reasonable conclusion from this is that, prior to the June 17, 1991 meeting, the parties had not agreed to expand the commercialization and royalty aspects of the 1985/1991 Agreements to materials other than the CT-7.

Among the post-1991 evidence to which DeKalb turns for support are [*66] RPA documents in which RPA scientists discuss the double mutant maize gene in the same documents as the CT-7 gene, (*see, e.g.*, Def.'s Ex. 401; 470), or in which RPA scientists discuss the EPSPS gene as being within "the framework of the DEKALB contract," (Def.'s Ex. 391). Also, in an internal report, RPA scientists discussed its evaluation of the mutated maize gene under the heading "DeKalb Agreement." (Def.'s Ex. 420, at RPA 023092-93.) Yet, these references are isolated labels and classifications by RPA's scientists—they do not reasonably suggest that RPA

meant to provide DeKalb with full commercialization rights under an agreement limited on its face to the CT-7 gene. There is no question that, as discussed, the 1985/1991 Agreements provided a framework to accommodate non-CT-7 (non-Comai) genetic materials exchanged between Calgene/RPA and DeKalb but DeKalb has pointed to nothing within the Agreements which would support a reading that a transfer of that material would give DeKalb a license to commercialize a product containing that material. Neither did DeKalb adduce evidence that anyone discussed such an agreement or comported themselves in such a way as to infer such an [*67] agreement pertaining to RD-125. DeKalb's conclusions rely on unsubstantiated conjecture about the intent of the parties to transfer commercialization rights, rather than on evidence that RPA agreed to give DeKalb such a sweeping license to RD-125.

DeKalb further points to documents, created after the November 1992 meeting, in which RPA refers to providing the double mutant gene pursuant to a "contractuel [sic] commitment" to DeKalb. (Br. Opp. RPA's Mot. Entry J. [Doc. # 402], at 7 (*citing* Def.'s Ex. 14, at RPA 016128); *see also* Def.'s Ex. 490, at RPA 016136; Def.'s Ex. 31, at RPA 016146; Def.'s Ex. 40.) However, rather than shedding any light on whether the contractual commitment included commercialization rights and royalty responsibilities, these documents simply support the jury's verdict that an oral agreement was made on November 2, 1992 in which RPA would provide RD-125 to DeKalb in exchange for results of testing.

Finally, DeKalb contrasts the lack of written agreement for the transfer of RD-125 with Dr. Mackey's testimony that RPA was "fastidious" about requiring written agreements for the transfer of genetic material, (Br. Opp. RPA's Mot. Entry J. [Doc. # 402], [*68] at 7 (*citing* Apr. 14, 1999 Tr. [Doc. # 488], at 186)), and documentary evidence that Dr. Freyssinet required written agreements for other materials it transferred

that were not related to glyphosate tolerance, (*id.* at 7 (*citing* Def.'s Ex. 27; Def.'s Ex. 523)). This argument has no force, however, since RD-125 did relate to glyphosate tolerance and was protected by the 1984 Confidentiality Agreement. There would have been no need for an additional written agreement. (Apr. 12, 1999 Tr. [Doc. # 486], at 135-38; Pl.'s Ex. 43, Minutes, June 17, 1991 Rhone Poulenc/DEKALB Plant Genetics Meeting, at DKB 040792.)

In sum, from the evidence in the first trial, a reasonable juror could conclude only that, in 1991, RPA assumed an agreement that specifically contemplated that further technological development would not be included within the commercial licenses granted under the 1985/1991 Agreements. (Pl.'s Ex. 2, Art. 8.1, at 16.) This agreement incorporated the 1984 Confidentiality Agreement, which specifically did not include commercialization rights. (*Id.* Art. 8.3, at 17; Pl.'s Ex. 1, 1984 Confidentiality Agreement, P 4.) Furthermore, at the first meeting between RPA and DeKalb, [*69] the parties specifically engaged in a broad collaboration based upon finding glyphosate tolerance in corn, postponed dealing with legal, regulatory, and patent issues, and adopted the 1984 Confidentiality Agreement. (Pl.'s Ex. 43, Minutes, June 17, 1991 Rhone Poulenc/DEKALB Plant Genetics Meeting, at DKB 040792.) This intent to postpone agreement regarding commercialization and royalties of technology other than CT-7 cannot be undermined by vague references from scientists regarding "contractuel [sic] commitments." Rather, DeKalb needed to present evidence that RPA and DeKalb had a meeting of the minds regarding a license to commercialize the double mutant maize gene. It did not. There is simply no evidence upon which a reasonable jury could conclude that the parties understood and agreed that the 1985/1991 Agreements had been modified to the extent that DeKalb was given a license to commercialize RD-125.

The jury's verdict response to Question 1(C) must be read with this conclusion in mind. Question One of the Issue

Sheet asked, "Has RPA proven by a preponderance of the evidence that DeKalb agreed to provide RPA with the results of its testing in return for receiving the double [*70] mutant maize EPSPS genes?" After the jury's affirmative response, the jury was asked three questions regarding how the agreement was formed. The jury answered that the agreement was formed (A) orally at the November 1992 meeting in Mystic, Connecticut, (B) through the conduct of RPA and DeKalb at or following the Mystic meeting in November 1992, and (C), through the conduct of the parties as a modification of the 1985/1991 written agreements. Given that no evidence was presented such that a reasonable jury could conclude the modification mentioned in (C) would include commercialization rights, the jury's answer can mean only that the modification was DeKalb's agreement to provide RPA with the results of its testing in return for receiving the double mutant maize EPSPS genes. Moreover, this interpretation is the more natural reading of the Issue Sheet, because the "agreement" mentioned in 1(C) initially was defined as such in Question 1. Furthermore, DeKalb's license argument completely ignores the jury's response to Questions 1(A) and 1(B); whereas the Court's reading of the Issue Sheet and the evidence allows for consistency among the jury's answers. Finally, the answer in Question [*71] 1(C) is supported by Illinois law, which allows parties to a contract to modify provisions of the contract without affecting their liabilities under other terms of the agreement. *See Deien Chevrolet, Inc.* v. *Reynolds and Reynolds Co.*, 265 Ill. App. 3d 842, 845, 639 N.E.2d 949, 952, 203 Ill. Dec.390, 393 (1994). In other words, RPA and DeKalb could modify a contract relating to the CT-7 gene by adding a separate agreement with different obligations regarding the double mutant maize gene.

III (B) (iii)

In conclusion, DeKalb was required to present all of its evidence relating to potential licenses to the technology in the first trial. After examining all of the evidence in the light

most favorable to DeKalb, it is determined that no reasonable jury could find that DeKalb possessed the right to commercialize the RD-125 technology under a modified version of the 1985/1991 Agreements.

III (C)

The Court dismissed Monsanto from the second trial because Monsanto is a bona fide purchaser of the RD-125 technology, and therefore cannot be liable as a patent infringer or a trade secret misappropriater.[21] The following brief summary of facts will supplement the facts set [*72] forth *supra*,[22] and will provide context for the Court's resolution of this issue.

III (C) (i)

In the 1994 Agreement, RPA and Calgene granted DeKalb the nonexclusive right to use and to sublicense various technologies and genetic materials. Section 4.1 of that agreement reads as follows:

> 4.1 RPA and CALGENE hereby grant to DeKalb the world-wide, paid-up right to use the RPA/CALGENE Technology and RPA/CALGENE Genetic Material in the field of use of corn. DeKalb shall have the right to grant sublicenses to the aforementioned right to use without further payment being made to RPA and CALGENE.

(Pl.'s Ex. 4, 1994 Agreement § 4.1, at 5.) The terms "RPA/CALGENE Technology" and "RPA/CALGENE Genetic Material" are defined in Sections 1.6 [*73] and 1.7, respectively, and it is undisputed that the terms include both

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[21] Monsanto made two motions on this issue: a motion for Judgment as a Matter of Law on the patent and misappropriation claims [Doc. # 355] and a motion for summary judgment under Fed. R. Civ. P. 56 [Doc. # 394].

[22] *See* discussion *supra* Part I.

the double mutant maize gene and the OTP at issue in the second phase of the trial.

In 1996, DeKalb entered into a licensing agreement ("1996 Agreement") with Monsanto in which DeKalb stated that it had "certain rights relating to Genetic Element(s), Germplasm, Plasmid(s) and Gene(s), including technical information and Know-How relating to, among other things, transformed plants and seeds, useful for Glyphosate protection in corn plants." (1996 Agreement § 1.04.) DeKalb granted to Monsanto "a royalty-bearing, non-exclusive, license under the Licensed DEKALB Patent Rights, DEKALB Know-How, Licensed DEKALB Methods and Licensed DEKALB Non-patent Proprietary Materials, (a) to make, have made, and use Licensed MONSANTO Corn Products . . ., and (b) to sublicense . . . to make, have made, use and sell Licensed MONSANTO Corn Products." (*Id.* § 3.10.) Monsanto cross-licensed to DeKalb other technology in return. It is undisputed that among the materials DeKalb licensed to Monsanto through the 1996 Agreement was the same construct—RD-125—that RPA and Calgene licensed to DeKalb through the 1994 Agreement.

DeKalb [*74] and Monsanto, under the auspices of the 1996 Agreement, developed and commercialized the GA21 corn line by utilizing RD-125, among other things. Again, this GA21 corn line became what is now sold as Roundup Ready corn.

At a motions hearing on April 26, 1999, both Monsanto and DeKalb admitted that their use of the OTP in Roundup Ready corn infringed United States Patent 5,510,471 (" '471 patent"). Moreover, RPA claimed that Monsanto's and DeKalb's commercialization of RD-125 resulted in misappropriation of RPA's trade secrets.

Monsanto asserted several defenses to both the patent and the misappropriation claims; however, only one defense was

decided upon by the Court.[23] Monsanto asserted that, even though the Court rescinded the 1994 license that forms the basis for its sublicense under the 1996 Agreement, Monsanto should not be liable for patent infringement or for misappropriation because it was a bona fide purchaser of the license for value without notice of DeKalb's wrongdoing. (Br. Supp. Def. Mot. Pursuant to F.R.C.P. 56 [Doc. # 395], at 13-19; Br. Supp. Def. Mot. Judgment Matter L. [Doc. # 356], at 5-10.) [*75]

III (C) (ii)

The bona fide purchaser rule is recognized in patent law, *See Filmtec Corp.* v. *Allied-Signal, Inc.*, 939 F.2d 1568, 1573-74 (Fed. Cir. 1991), as well as by North Carolina, through the common law, *See Wilson* v. *Commercial Fin. Co.*, 239 N.C. 349, 356, 79 S.E.2d 908, 914 (1954), and by its adoption of the Uniform Commercial Code, *See* N.C. Gen. Stat. § 25-2-403. As noted by the Federal Circuit, "it is well established that when a legal title holder of a patent transfers his or her title to a third party purchaser for value without notice of an outstanding equitable claim or title, the purchaser takes the entire ownership of the patent, free of any prior equitable encumbrance." *Filmtec*, 939 F.2d at 1573 (applying common law bona fide purchaser rule). Moreover, the Federal Circuit recently affirmed the use of the bona fide purchaser defense in *Heidelberg Harris, Inc.* v. *Loebach*, 145 F.3d 1454, 1458 (Fed. Cir. 1998). In that case, an inventor assigned all rights in his invention to an assignee, who later obtained a patent on the invention and then granted an unrestricted, exclusive license to that patent [*76] to a third party. *See id.* at 1456-57. Although the original assignment from

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[23] As the Court finds that Monsanto is entitled to protection as a bona fide purchaser from RPA's claims of patent infringement and misappropriation, the Court will not address Monsanto's alternative arguments for dismissal. (Br. Supp. Def. Mot. Pursuant to F.R.C.P. 56 [Doc. # 395], at 13.)

the inventor to the assignee was later rescinded due to fraud, the Federal Circuit held that the third party was not liable for patent infringement because it retained its exclusive license under the bona fide purchaser rule. *See id.* at 1459.

In the instant case, the essential prerequisites for finding that Monsanto is a bona fide purchaser are evident. There has been no suggestion that Monsanto had notice of DeKalb's fraudulent behavior when Monsanto received its license in 1996. Moreover, Monsanto gave value to DeKalb in the form of licenses to certain of its patents and technology in exchange for the license to DeKalb's (and RPA's) technology, including RD-125. Therefore, Monsanto argues that it should be considered a bona fide purchaser under Filmtec and Heidelberg Harris.

However, RPA asserts that this case differs from Filmtec and Heidelberg Harris in that Monsanto, the alleged bona fide purchaser, did not receive its license from the legal title holder of the technology, RPA. Rather, Monsanto received a license to the technology from a nonexclusive [*77] licensee that had the right to sublicense. Therefore, according to RPA, as between the two innocent parties here—RPA and Monsanto—Monsanto should bear the risk of fraud.

This scenario appears to be a matter of first impression in the law of patents and of trade secret misappropriation. In order to resolve whether Monsanto should be considered a bona fide purchaser, the Court will turn to the precepts that undergird the bona fide purchaser rule generally, and then apply those precepts to the facts of this case. One of the main considerations behind the bona fide purchaser rule is the "waste that would be created if people either had to inquire how their transferors obtained their property or to accept a risk that a commercial deal would be reversed for no reason they could perceive at the time." *Bonded Fin. Servs., Inc.* v. *European Am. Bank,* 838 F.2d 890, 892 (7th Cir. 1988). The bona fide purchaser rule preserves the stability of commercial transactions by promoting the free transferability and nego-

tiability of property in commerce. *See, e.g., C.H. Robinson Co.* v. *B.H. Produce Co.*, 723 F. Supp. 785, 793 (N.D. Ga. 1989). RPA's position would [*78] frustrate this rationale because it would undermine the ability of a licensee to grant sublicenses. Any reasonable party interested in receiving a license for technology virtually would be forced to obtain the license from the patent owner rather than a licensee, even if that licensee had been granted the clear power to grant sublicenses by the technology's owner. Otherwise, the potential sublicensee would bear a continuing risk that the licensee obtained the technology through fraud.

Therefore, it seems more appropriate to place the risk of fraud on the party with the best chance of catching the fraud initially—the defrauded party. Cf. *Sale Chevrolet, Buick, BMW, Inc.* v. *Peterbilt of Florence, Inc.*, 133 N.C. App. 177, 514 S.E.2d 747, 749-50 (N.C. Ct. App. 1999). As the Supreme Court has noted, as strong as a defrauded party's claim in equity may be, "it can in no case be stronger than that of a purchaser who has put himself in peril by purchasing a title, and paying a valuable consideration, without notice of any defect in it, or adverse claim to it." *United States* v. *California & O. Land Co.*, 148 U.S. 31, 41, 37 L. Ed. 354, 13 S. Ct. 458 (1893). [*79] Such risk allocation is applicable in this case; even though it is a right to use and to sublicense that was obtained by fraud, rather than actual title to the patent.

Indeed, more important than whether DeKalb was the "legal title holder" of the technology is that Monsanto's sublicense came from a license stating that it had been paid for up-front and was unrestricted. From Monsanto's perspective as an innocent sublicensee, under the grant provided in the 1994 Agreement, Monsanto's license rights could not be taken away by any subsequent action of DeKalb, the licensee, such as nonpayment of royalties. No situation other than fraud would disenfranchise DeKalb from its right to use and to sublicense the technology in the field of use of corn. Because the bona fide purchaser rule serves, in part, to protect

innocent purchasers in situations in which fraud is present, Monsanto should not be precluded from relying on the 1994 Agreement's grant to DeKalb, even though DeKalb never received actual title to the technology. Thus, while RPA is correct that DeKalb is not the legal title holder of the technology because it is a nonexclusive licensee, this distinction is not enough to remove Monsanto [*80] from being considered a bona fide purchaser.

Therefore, the Court holds that in this case, in which DeKalb's right to use was paid for up-front, unrestricted, and accompanied by a right to sublicense, the sublicensee, Monsanto, is entitled to be considered a bona fide purchaser, because it paid value for the right to use the technology without knowledge of any wrongdoing by DeKalb. Monsanto will be DISMISSED from Counts I and V of RPA's Complaint, and RPA's motion for reconsideration of this ruling [Doc. # 518] is DENIED.

Although it recognizes that the bona fide purchaser in Heidelberg Harris received an indefinite license to the disputed patent, *See Heidelberg Harris,* 145 F.3d at 1459, the Court here holds that Monsanto is dismissed only from the patent infringement and trade secret misappropriation claims at issue in this case. In other words, the Court makes no finding regarding any future license by Monsanto of the technology at issue here. Moreover, Monsanto apparently has sublicensed RPA's technology to various seed manufacturers, and Monsanto seems also to assert that all of its sublicensees are free from liability to RPA for patent infringement and [*81] trade secret misappropriation. While it is true that DeKalb granted Monsanto the right to sublicense the technology in the 1996 Agreement, (1996 Agreement § 3.10), the plain language of the 1994 Agreement may not support the right of DeKalb's sublicensees, such as Monsanto, to grant sublicenses themselves. Therefore, the Court makes no finding

regarding continuing use of the technology by Monsanto's sublicensees either.[24] [*82]

III (D)

Next, DeKalb asks that the jury's finding of nonobviousness be set aside and judgment as a matter of law be entered for DeKalb that Claim 11 of the '471 patent is obvious and, thus, invalid. Although the Court cited to general standards for a motion under Fed. R. Civ. P. 50(b) *supra*, specific criteria, set out below, exist for such a motion when it involves the question of obviousness.

A patent is invalid "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains." 35 U.S.C. § 103. It is undisputed that the ultimate question of obviousness is a question of law. *See Graham* v. *John Deere Co.*, 383 U.S. 1, 17, 15 L. Ed. 2d 545, 86 S. Ct. 684 (1966). At the same time, factual issues underlie the ultimate obviousness decision, including "(1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) certain secondary considerations." [*83] *Richardson-Vicks Inc.* v. *Upjohn Co.*, 122 F.3d 1476, 1479 (Fed. Cir. 1997) (*citing Graham*, 383 U.S. at 17-18). These factual issues do not convert the ultimate conclusion of obviousness from one of law into one of fact. *See id.* "Nevertheless, in re-

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[24] There also is a question whether Monsanto's sublicensees could rely on Section 9.2 of the 1994 Agreement to assert that they are bona fide purchasers. Under Section 9.2, DeKalb could assign its rights under the 1994 Agreement to Monsanto in December 1998, because Monsanto acquired "substantially all of the assets" of DeKalb at that time. (Pl.'s Ex. 4, 1994 Agreement P 9.2, at 8-9.) However, any sublicensee that acquired its rights after December 1998 would have acquired them with knowledge of RPA's equitable claim in this lawsuit, which was filed in 1997. Therefore, the bona fide purchaser rule might not apply.

creating the facts as they may have been found by the jury, and in applying the Graham factors to the case, [the Court] assesses the record evidence in the light most favorable to the verdict winner," in this case RPA. *Id.* "Where, as here, there is a verdict of validity, the question is not whether the patentee had introduced sufficiently substantial evidence to support the verdict, but whether the challenger's evidence so met the burden imposed by 35 U.S.C. § 282 ('the burden of establishing invalidity of a patent or any claim shall rest on the party asserting such invalidity') that reasonable jurors could not have concluded that the challenger failed to overcome that burden." *Perkin Elmer Corp.* v. *Computervision Corp.*, 732 F.2d 888, 893 (Fed. Cir. 1984).

DeKalb asserts that it should be granted judgment as a matter of law because there was no substantial [*84] evidence to support the jury's determination of nonobviousness. (Def. Br. Supp. Motion J. Matter L. [Doc. # 511], at 5-7.) According to DeKalb, the alleged similarity in structure between the OTP and the prior art "renders the OTP obvious." (*Id.* at 7.) Because of this structural similarity, DeKalb asserts that RPA was required to present evidence to overcome this obviousness, either in the form of "improved properties" or "superior results." (*Id.* at 5-11.) Finally, DeKalb claims that RPA did not provide proof of a nexus between the OTP and any commercial success or long-felt need. (*Id.* at 11.)

In examining the factual basis for the jury's verdict and in construing DeKalb's arguments against that verdict, the Court remains cognizant of the statutory presumption of validity, *see* 35 U.S.C. § 282, as well as that "the facts to support a conclusion of invalidity must be proven by clear and convincing evidence." *Richardson-Vicks Inc.*, 122 F.3d at 1480 (quoting *Ryko Mfg. Co.* v. *Nu-Star, Inc.*, 950 F.2d 714, 716 (Fed. Cir. 1991)) (internal quotation marks omitted). Moreover, the Court is aware that the Federal Circuit [*85] has stated that "it is preferred that a jury be provided with special interrogatories designed to reveal more clearly the

findings it made." *Perkin Elmer Corp.*, 732 F.2d at 893. However, the jury in this case was not asked to make such factual findings regarding obviousness; rather, the jury was asked to return a general verdict on the question of obviousness. (Verdict Form for Phase I [Doc. # 459], at 1.) Therefore, "absent such interrogatories, the law presumes the existence of findings necessary to support the verdict the jury reached." *Perkin Elmer Corp.*, 732 F.2d at 893. "The particular findings the jury must make before it can reach a verdict are controlled by the court's instructions to the jury." *Id.* In this case, the jury was instructed in great detail as to the factors it was to consider under Graham, and then it was asked to deliver a general verdict. (Jury Instructions [Doc. # 460], at 11-17.) As detailed below, considering the evidence in the light most favorable to RPA, the Court concludes that a reasonable jury could properly have found that DeKalb did not prove by clear and convincing evidence that the OTP, as described in Claim 11 of the '471 patent, was obvious.

III (D)(i)

It is well-established that the first step in any validity analysis is to construe the claims of the invention to determine the subject matter for which patent protection is sought. n25 *See Rockwell Int'l Corp.* v. *United States*, 147 F.3d 1358, 1362 (Fed. Cir. 1998). In general, the patent dispute in the instant case revolves around transit peptides—strings of amino acids that attach to various genes ("passenger proteins") and, then, transport the genes from the cytoplasm of a plant cell into the plant cell's chloroplast. Claim 11's optimized transit peptide is a genetically constructed version of a natural transit peptide, consisting of

> a nucleic acid construct which codes for a polypeptide sufficient for localization of a gene product in a chloroplast of a plant cell which polypeptide comprises a fusion which in the direction of translation comprises a first chloroplast transit peptide from a sunflower ribulose-1,5-bisphosphate carboxylase

> small subunit, approximately 22 amino acids from the N-terminal region of a mature maize ribulose-1,5-bisphosphate carboxylase small subunit and a second chloroplast transit peptide from a maize rubulose-1,5 bisphosphate carboxylase small subunit.

(Pl.'s Ex. 6.) In simplified terms, the OTP is a specific constructed formation of three genetic elements. The first part consists of a sunflower's natural transit peptide, which is a piece of DNA from a sunflower gene called Rubisco that is fifty-five amino acids long. The second part [*86] is the first twenty-two amino acids from the mature portion of the maize Rubisco gene (also called the "N-terminal extension"). The final part is a second natural transit peptide, which is forty-seven amino acids long and from the maize Rubisco gene. (May 17, 1999 Tr. [Doc. # 494], at 186-91; May 18, 1999 Tr. [Doc. # 495], at 372.) The OTP is to be used for facilitating the transfer of EPSPS genes from a plant cell's cytoplasm to its chloroplast in order to effect glyphosate tolerance. (Pl.'s Ex. 6, at col. 1-2.)

III (D) (ii)

The second step in an obviousness inquiry is to determine whether the claimed invention would have been obvious as a legal matter, based on underlying factual inquiries including: (1) the level of ordinary skill in the art, (2) the scope and content of the prior art, (3) the differences between the claimed invention and the prior art, and (4) secondary considerations of nonobviousness. *See Smiths Indus. Med. Sys., Inc.* v. *Vital Signs, Inc.*, 183 F.3d 1347, 51 U.S.P.Q.2D (BNA) 1415 (Fed. Cir. July 14, 1999).

Level of Ordinary Skill in the Art

The parties agreed prior to the trial that a person of ordinary skill in the art is a person having [*87] a doctoral degree in molecular biology or a masters degree in molecular biology in addition to a few years of experience in the field of

plant molecular biology. (May 28, 1999 Tr. [Doc. # 501], at 1950.)

Scope and Content of the Prior Art

The prior art to be examined must have been published prior to March 5, 1991, which is the effective filing date for the '471 patent. *See* 35 U.S.C. § 103 (mandating that obviousness be tested as of "the time the invention was made").

The evidence at trial demonstrated that, prior to 1991, it was well known in the field that introducing some type of EPSPS gene (whether from a bacterium or a plant) into a plant cell's chloroplast may assist in providing glyphosate tolerance in plants. It was also known that a transit peptide was necessary for moving an EPSPS gene, or another protein, into a plant cell's chloroplasts. (Def.'s Ex. 1421 (U.S. Patent No. 4,940,835 ("Shah patent")); May 21, 1999 Tr. [Doc. # 533], at 1166.) In nature, once a protein is inside the chloroplast, an enzyme removes the transit peptide, and leaves a "mature" protein. (May 26, 1999 Tr. [Doc. # 499], at 1457 (Dewey Test.).)

Calgene's Dr. Luca [*88] Comai conducted some of the pioneering work in modifying EPSPS genes to achieve glyphosate resistance once the EPSPS gene is moved into the chloroplast. He worked primarily with an EPSPS gene called the CT-7, which was derived from a bacterium, not a plant. Because bacterial EPSPS genes are not connected to transit peptides naturally, Dr. Comai initially attached to the CT-7 gene a transit peptide from a protein called Rubisco, in order to transport the CT-7 gene into the plant's chloroplast.[26] However, this simple transit peptide did not move the CT-7 gene into the plant chloroplast very effectively. (*Id.* at 1458 (Dewey Test.).) As DeKalb's expert, Dr. Ralph Dewey, ex-

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[26] In nature, corn plants possess EPSPS genes that have their own transit peptides, which are sufficient to move the EPSPS proteins into the chloroplast. (May 26, 1999 Tr. [Doc. # 499], at 1457 (Dewey Test.).)

plained, the chloroplast did not recognize the "foreign" protein (i.e., the bacterial protein) and therefore it did not allow entry into the chloroplast, even though a transit peptide was being used. (*Id.* at 1459.) [*89]

To address this problem, Dr. Comai attached to the original transit peptide a short region of the "mature" portion of the same Rubisco gene, which, as mentioned above, also is called the "N-terminal extension." (*Id.* at 1459-60.) In a 1988 article published in The Journal of Biological Chemistry, Dr. Comai used an N-terminal extension that was twenty-four amino acids long, and concluded that the extension was necessary for efficient chloroplast transport. (Def.'s Ex. 148, at 15104.) Dr. Dewey explained that the rationale for adding a portion of the mature protein was to "fool" the chloroplast by following the natural transit peptide with a part of a protein that normally belongs in the chloroplast. (May 26, 1999 Tr. [Doc. # 499], at 1460.) Therefore, the construct that became known at the trial as the "Comai transit peptide" in the prior art consisted of a natural transit peptide from a sunflower Rubisco gene connected to twenty-four amino acids from a mature sunflower Rubisco protein.[27] For glyphosate resistance, this construct was then followed by the CT-7 bacterial gene. The Comai transit peptide, which was the cumulative result of Dr. Comai's research as published in [*90] patents, (Def.'s Exs. 131 (U.S. Patent No. 4,535,060), 160 (U.S. Patent No. 4,769,061)), a patent application (Def.'s Ex. 1232 (PCT application designated as WO/88/2401)), and the article in The Journal of Biological Chemistry, (Def.'s Ex.

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[27] Drs. DeRose and LeBrun testified that the Comai prior art, as described by the Comai patent, contained an amino acid extension of 22 amino acids. (May 18, 1999 Tr. [Doc. # 495], at 374 (DeRose Test.); May 19, 1999 Tr. [Doc. # 496], at 498 (LeBrun Test.).) However, Dr. Dewey testified that the Comai transit peptide had an extension of 24 amino acids, (May 26, 1999 Tr. [Doc. # 499], at 1461), which can be seen in Dr. Comai's article, (Def.'s Ex. 148, at 15105). The Court will use 24 as the number of amino acids in the Comai extension because that is the number actually found in the 1988 Comai publication.

148),[28] was one of the two prior transit peptide constructs relied upon by DeKalb to demonstrate that the OTP was obvious. [*91]

The other transit peptide construct in the prior art relied upon by DeKalb is disclosed in U.S. Patent No. 5,776,760 (the "Barry patent") (Def.'s Ex. 1452). The Barry patent discloses a transit peptide construct made of three parts. First, it contains a natural transit peptide of the Rubisco protein from arabidopsis, which is fifty-five amino acids long. Second, this transit peptide is attached to twenty-three amino acids of the mature portion of this arabidopsis Rubisco gene. The third part is a "serine residue and eight amino acids, six of which correspond to the very end of the transit peptide." (May 27, 1999 Tr. [Doc. # 500], at 1689 (Dewey Test.).)

Differences Between the Claimed Invention and the Prior Art

The most pronounced difference between the Comai transit peptide construct and the OTP is that the OTP contains an additional, complete transit peptide between the N-terminal extension and the passenger protein. This second transit peptide is no "mere structural variation," as claimed by DeKalb. (Def. Br. Supp. Mot. J. Matter L. [Doc. # 511], at 9.) Rather, the OTP's final transit peptide serves to allow the entire construct, including the N-terminal extension, to [*92] be disengaged from the passenger protein after the construct has been transported into the chloroplast. (May 18, 1999 Tr. [Doc. # 495], at 375 (DeRose Test.); *id.* at 401 (LeBrun Test.).) In contrast, the Comai transit peptide construct leaves its N-terminal extension attached to the passenger protein, because

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[28] The jury specifically considered as prior art these four Comai works, as well as two others: U.S. Patent No. 5,776,760 ("Barry patent") (Def.'s Ex. 1452), discussed *infra*, and U.S. Patent No. 4,940,835 ("Shah patent") (Def.'s Ex. 1421), discussed *supra*. (Jury Instructions [Doc. # 460], at 13.)

only the initial transit peptide is removed by an enzyme after the construct enters the chloroplast. (*Id.* at 374-75.)

DeKalb argues that the N-terminal extension does not affect the passenger protein; therefore, the fact that the OTP's extension is removed is a meaningless distinction from the Comai prior art. However, Dr. DeRose testified that because the N-terminal extension is removed, the OTP solved the "paradox" that existed in the research prior to 1991. The paradox was that the N-terminal extension was necessary to import the EPSPS passenger protein into the chloroplast (as noted by Comai), but, by remaining attached to the protein after the first transit peptide was removed, the extension decreased the efficiency of the EPSPS genes once they were inside the chloroplasts. (*Id.* at 354-55.) Dr. LeBrun testified regarding experiments that supported Dr. DeRose's [*93] description of the paradox. In the 1980's, RPA experimented in tobacco with Dr. Comai's teachings regarding the N-terminal extension and concluded that adding an N-terminal extension resulted in higher glyphosate tolerance than that which resulted from transit peptides without the extension, but it still did not produce an agronomical level of resistance. (*Id.* at 392-93.) According to Dr. LeBrun, the larger the extension that is attached to the EPSPS enzyme, the more the activity of the enzyme in the chloroplast is decreased and glyphosate tolerance is reduced. (*Id.* at 396-400.) Even Dr. Dewey, DeKalb's expert witness, admitted that severing the extension from the passenger protein might make a difference in some proteins. (May 26, 1999 Tr. [Doc. # 499], at 1463.) Therefore, the evidence would support a jury finding that there was a significant difference between the Comai prior art and the OTP, because the OTP contains a second, full transit peptide that allows a chloroplast enzyme to sever the EPSPS enzyme from the entire transit peptide construct.

Similar to the Comai transit peptide and the OTP, the Barry transit peptide construct contains an initial, natural transit [*94] peptide from a Rubisco gene attached to an N-

terminal extension from a mature Rubisco gene—though the extension in Barry is twenty-three amino acids in length. (May 27, 1999 Tr. [Doc. # 500], at 1688-89 (Dewey Test.).) A difference between the Barry patent and the OTP is that the OTP's natural transit peptides come from Rubisco genes in sunflower and maize, whereas Barry's natural transit peptides are derived from arabidopsis. (*Id.* at 1689.) Although transit peptides from different plants would be expected to function in a similar fashion, Dr. Dewey acknowledged that they would not behave "exactly precisely" the same as each other. (*Id.* at 1691.) A more significant difference between Barry and the OTP is that the Barry construct does not end with a full transit peptide. Rather, the last piece of the Barry construct prior to the passenger protein is derived from the very end of an arabidopsis Rubisco transit peptide and consists of eight amino acids. (May 26, 1999 Tr. [Doc. # 499], at 1488 (Dewey Test.).) In contrast, the final part of the OTP is a full, natural transit peptide from the maize Rubisco gene that is forty-seven amino acids in length. (May 17, 1999 Tr. [Doc. [*95] # 494], at 188 (DeRose Test.).)

Evidence of Secondary Considerations

Secondary considerations are essential components of the obviousness determination. *See In Re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998). Three such considerations were at issue in this case: commercial success, long-felt but unsolved need, and failure of others. *See Graham*, 383 U.S. at 17-18. Although DeKalb attempted to disprove a fourth secondary consideration—unexpected results showing superiority over the prior art—RPA did not rely on this consideration in its obviousness case and therefore the Court will not discuss it. *See Medtronic, Inc.* v. *Intermedics, Inc.*, 799 F.2d 734, 739 n.13 (Fed. Cir. 1986) (stating that "the absence of objective evidence [i.e., secondary considerations] is a neutral factor").

The dispute regarding these secondary factors is not whether they exist, but rather whether evidence about the factors relates to the OTP by itself or to the Roundup Ready

corn, of which the OTP is a part. In other words, whether to consider evidence of these secondary factors depends on whether the requirement of a "nexus" is met. According [*96] to the Federal Circuit, "[a] nexus is required between the merits of the claimed invention and the evidence offered, if that evidence is to be given substantial weight enroute to conclusion on the obviousness issue." *Stratoflex, Inc.* v. *Aeroquip Corp.*, 713 F.2d 1530, 1539 (Fed. Cir. 1983).

For evidence of commercial success to be introduced, RPA bears the burden of coming forward with evidence sufficient to constitute a prima facie case of the requisite nexus between the commercial success of Roundup Ready corn and the OTP. *See Demaco Corp.* v. *F. Von Langsdorff Lic., Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988).

> A prima facie case of nexus is generally made out when the patentee shows both that there is commercial success, and that the thing (product or method) that is commercially successful is the invention disclosed and claimed in the patent. When the thing that is commercially successful is not coextensive with the patented invention--for example, if the patented invention is only a component of a commercially successful machine or process—the patentee must show prima facie a legally sufficient relationship between that which is patented [*97] and that which is sold.

Id. DeKalb asserts that it is the GA21 event (created by DeKalb) that led to any commercial success of Roundup Ready corn—not the OTP—and therefore, RPA did not successfully demonstrate this "legally sufficient relationship." (Def. Br. Supp. Mot. J. Matter L. [Doc. # 511], at 11-12.)

However, there is substantial evidence to demonstrate that the OTP plays an essential role in imparting the glyphosate tolerant trait to Roundup Ready corn. First, the OTP patent itself was directed towards improving glyphosate resistance by facilitating the transfer of EPSPS genes to a plant

cell's chloroplast. (Pl.'s Ex. 6, at col. 1-2.) Therefore, the OTP in Roundup Ready corn is being used in a manner consistent with the purpose of the '471 patent. Second, as Drs. DeRose and LeBrun testified, the OTP solved the "paradox" that existed with the Comai prior art because its N-terminal extension is disengaged after the passenger protein is transported into the chloroplast. This evidence reasonably could support a conclusion that the OTP's solution to this paradox resulted in commercial levels of glyphosate resistance by enabling certain enzymes to remain active [*98] after they were disconnected from the transit peptide. Third, and quite simply, it had been known since at least 1986 that a transit peptide was necessary to bring an EPSPS gene into the chloroplast to provide glyphosate resistance, and the OTP is the only transit peptide to be used in commercially viable, glyphosate-resistant corn. For example, Monsanto abandoned its most promising corn events in December 1996 in order to concentrate fully on GA21, because Monsanto's lines—containing other transit peptides—showed insufficient levels of glyphosate tolerance. (May 21, 1999 Tr. [Doc. # 533], at 1117 (Armstrong Test.).) Moreover, the NK event, which allegedly will replace the GA21 event and which uses a different transit peptide, has not been commercialized yet, nor will it be introduced until at least the year 2001. (*Id.* at 1119.)

It is true that when the OTP was combined with genes other than the double mutant maize gene in RD-125, it did not provide glyphosate tolerance on its own. (May 18, 1999 Tr. [Doc. # 495], at 353 (DeRose Test.).) Moreover, Dr. DeRose testified that it was the combination of the OTP and the double mutant maize gene in RD-125 that imparted the glyphosate [*99] tolerance trait in corn. (May 17, 1999 Tr. [Doc. # 494], at 211.) However, DeKalb has not provided any case that suggests that the claimed invention must single-handedly be responsible for the commercial success of the disputed product. Rather, as Demaco Corporation makes clear, because this case involves a situation in which "the thing that is commercially successful is not coextensive with

the patented invention," RPA simply must demonstrate that there exists "a legally sufficient relationship between that which is patented and that which is sold." 851 F.2d at 1392. Although other elements may share credit for imparting the glyphosate tolerant trait in corn, sufficient evidence exists to conclude that the OTP also was required for the trait to be exhibited in Roundup Ready corn.

Thus, because the evidence is sufficient for a jury to conclude that the OTP is a direct cause of the glyphosate tolerant trait in Roundup Ready corn, it is appropriate to consider any evidence of the commercial success of Roundup Ready corn. In that regard, RPA's damages expert, Christopher Bokhart, provided sufficient evidence of the commercial success of Roundup Ready corn, including [*100] evidence that a premium was being paid specifically for the trait of glyphosate resistance. *See In re Huang,* 100 F.3d 135, 140 (Fed. Cir. 1996) (stating that evidence of commercial success is relevant in the obviousness context if there is proof that the sales were a direct result of the unique characteristics of the invention).

Moreover, because the evidence allows for a conclusion that a nexus exists between the OTP and the glyphosate tolerant trait in Roundup Ready corn, it is permissible to consider evidence of long-felt need and failure of others. It is undisputed that there was a long-felt but unresolved need for glyphosate tolerance in corn prior to 1991. (*See, e.g.*, May 21, 1999 Tr. [Doc. # 533], at 1080 (Armstrong Test.) (noting that Monsanto has attempted to impart glyphosate tolerance in corn since the mid-1980's).) Furthermore, DeKalb cannot seriously dispute the fact that sophisticated research companies and institutions spent many years failing to achieve marketable levels of glyphosate tolerance in corn. (*See, e.g., id.* at 1105 (stating that by 1996, Monsanto was not obtaining the level of glyphosate tolerance it desired in its own constructs); [*101] *id.* at 1119 (stating that Monsanto still has

not successfully commercialized a glyphosate tolerant corn event other than GA21).)

Given the substantial evidence of a direct connection between the OTP and the success of Roundup Ready corn as the first glyphosate tolerant corn seed, it is appropriate to consider RPA's evidence of commercial success, long-felt need, and failure of others, in order to resolve the obviousness issue.

III (D) (iii)

Again, it is a legal determination whether the Graham factors support the jury's conclusion that DeKalb did not met its burden in demonstrating invalidity under 35 U.S.C. § 103. This Court holds that sufficient evidence exists to support the jury's verdict.

DeKalb's claims for obviousness rest on the erroneous assumption that RPA was required to demonstrate that the OTP demonstrated superior, or improved, properties over the prior art, specifically over prior art by Dr. Comai and by the Barry patent. (DeKalb's Br. Supp. Mot. J. Matter L. [Doc. # 511], at 8-9.) While superior properties or unexpected results may be used to show nonobviousness, the lack of such evidence does not lead conclusively to a determination [*102] that an invention is obvious. *See Richardson-Vicks Inc.*, 122 F.3d at 1483 ("Evidence of secondary considerations, including evidence of unexpected results and commercial success, are but a part of the 'totality of evidence' that is used to reach the ultimate conclusion of obviousness.").

Instead, the relevant inquiry here is whether there is a reason, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the references to Comai and Barry, and that would also suggest a reasonable likelihood of success. *See, e.g., In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). Such a suggestion or motivation may come from the references themselves, from knowledge by those skilled in the art that certain references are of

special interest in a field, or even from the nature of the problem to be solved. *See Al-Site Corp.* v. *VSI Int'l., Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999). It is insufficient that prior art show similar components, unless it also contains some teaching, suggestion, or incentive for arriving at the claimed structure. *See Northern Telecom, Inc.* v. *Datapoint Corp.*, 908 F.2d 931, 934 (Fed. Cir. 1990). [*103]

DeKalb did not provide clear and convincing evidence that such motivation, teaching, or suggestion existed in the prior art it cited. Rather, DeKalb argues that RPA took the first two parts of the OTP—the Rubisco transit peptide and the N-terminal extension—from Comai, and combined them with an idea from the Barry patent to add a portion of a second transit peptide. Such an argument is nothing more than a classic case of an infringer inappropriately using hindsight to collect individual references from the prior art and employ them "as a mosaic to recreate a facsimile of the claimed invention." *W.L. Gore & Assocs.* v. *Garlock, Inc.*, 721 F.2d 1540. 1552 (Fed. Cir. 1983).

Initially, it must be noted that DeKalb's own expert admitted that nothing in the prior art that existed prior to the Barry patent in 1990, including the Comai prior art, would have taught, described, or suggested using a second natural transit peptide in a chimeric transit peptide construct. (May 27, 1999 Tr. [Doc. # 500], at 1712-13 (Dewey Test.).) Dr. Dewey stated that if one "does not consider Barry, those other prior arts don't tell you to make that particular structure [the OTP]." ([*104] *Id.*) Moreover, as noted above, there is sufficient evidence for the jury to conclude that the OTP's second transit peptide, which enables the disengagement of the N-terminal extension, is a significant difference from the Comai prior art. *See* discussion *supra*.

Therefore, DeKalb's obviousness defense rests on whether the Barry patent taught or suggested that a second transit peptide be added to a Comai-like structure of one Rubisco transit peptide and an N-terminal extension. The

only evidence DeKalb presented was Dr. Dewey's conclusory opinion that the Barry patent taught that a second cleavage site would occur between the second transit peptide and the passenger protein. (May 27, 1999 Tr. [Doc. # 500], at 1693-95 (Dewey Test.).) However, Dr. Dewey could not point to anything specific in the Barry patent, or any prior art, that would suggest this teaching. *See ATD Corp.* v. *Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998) (overturning an obviousness determination based solely upon the "conclusory opinion" of an expert witness, with no specific evidence of a teaching or suggestion in the prior art).

Moreover, from the evidence in the record, the jury reasonably [*105] could conclude that the Barry patent does not teach or suggest a second transit peptide. First, as noted above, the OTP has a complete, second transit peptide, while the Barry construct only describes an additional eight amino acids between the N-terminal extension and the passenger protein. Second, Dr. DeRose, an expert with six years of specific experience in making herbicide-tolerant plants, testified that he did not read the Barry patent to disclose to a person of ordinary skill in the art that a cleavage site existed between the N-terminal extension and the passenger protein. (May 27, 1999 Tr. [Doc. # 500], at 1777-78 (DeRose Test.).) Additionally, Dr. DeRose was able to point to a specific portion of the '471 patent that, to a person of ordinary skill in the art, does teach a cleavage site between the second transit peptide and the passenger protein. (*Id.* at 1803-04.) Overall, Dr. DeRose testified that nothing in the Barry patent (or the Comai patent) would lead one of ordinary skill in the art to the OTP of the '471 patent. (May 18, 1999 Tr. [Doc. # 495], at 381.) Given this evidence, the structural differences between the two patents cannot be explained away by Dr. [*106] Dewey's conclusory opinion regarding the alleged teaching of a second cleavage site by Barry.

Third, the attenuated relationship between the Barry patent and the OTP reduces the relevancy of any similarity be-

tween the two patents. The Court recognizes that a determination regarding the relationship of the prior art to the invention takes place prior to an inquiry regarding the prior art's teaching about that relationship. *See Monarch Knitting Mach. Corp.* v. *Sulzer Morat GMBH,* 139 F.3d 877, 882 (Fed. Cir. 1998) (stating that if those of ordinary skill would have recognized a relationship between the prior art and the invention, "then, and only then, does the trial court proceed to examine whether the prior art in fact contains a coherent teaching about that relationship"). By letting the jury consider the Barry patent, the Court already has determined that some relationship between the two patents exists. However, the strength of that relationship seems relevant to determining the depth of the teaching, suggestion, or motivation in the prior art. In this case, Dr. Dewey admitted that, although he spent 250 to 300 hours working on this matter, he was not aware of the [*107] Barry patent less than five months before trial. (May 27, 1999 Tr. [Doc. # 500], at 1686.) He was not aware of it at that point because the "transit peptide described in the Barry patent is a small portion of a larger patent" and "if you just look at . . . the title of the patent, all the information up front, you would not be aware that such a construct is described." (*Id.* at 1688.) Moreover, substantial evidence was presented that the Barry patent was focused on a different theory of glyphosate tolerance than the '471 patent, and therefore it would require a different type of transit peptide than the inventors of the OTP would find relevant. Whereas the OTP is focused on debilitating glyphosate in the chloroplasts, the Barry patent's purpose is to battle glyphosate in both the cytoplasm and the chloroplasts. (*Id.* at 1706-12.) According to Dr. DeRose, this different purpose requires a relatively weak transit peptide, because some of the enzyme would need to stay in the cytoplasm and not be transported to the chloroplast. (*Id.* at 1778-79.) This different purpose also explains why the Barry construct would use a transit peptide that is only 9% as efficient as a natural [*108] transit peptide. (May 18, 1999 Tr. [Doc. # 495], at 380 (DeRose Test.).)

Such a low level of efficiency indicated to Dr. DeRose that the Barry construct does not work well at bringing enzymes into the chloroplasts. (*Id.*) In contrast, the OTP's sole purpose is to transport the protein into the chloroplast.

Thus, DeKalb attempted to show obviousness by cobbling together various pieces of the prior art, without demonstrating any suggestion or motivation in the prior art to make the invention of Claim 11 of the '471 patent. DeKalb cannot satisfy its burden of proof with such an argument, for as the Federal Circuit has noted,

> determination of obviousness can not be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention. There must be a teaching or suggestion within the prior art, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources of information, to select particular elements, and to combine them in the way they were combined by the inventor.

ATD Corp. v. *Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998). [*109]

Although it is not necessary given this conclusion, the Court also notes that the secondary factors discussed above support a finding of nonobviousness. Companies such as Monsanto, RPA, and DeKalb tried for many years to develop glyphosate tolerant corn. After many failings, the only brand to make it to market is Roundup Ready corn, which contains the OTP. DeKalb has forecast great profits for Roundup Ready corn, and farmers pay a large "technology fee" solely for the glyphosate-resistant trait.

In sum, there was substantial evidence from which a reasonable jury could conclude that DeKalb failed to meet its burden to prove by clear and convincing evidence that Claim 11 of the '471 patent was invalid as obvious. Accordingly,

DeKalb's motion for judgment as a matter of law on the issue of obviousness [Doc. # 510] is DENIED.

III (E)

DeKalb next claims that there was not substantial evidence to support the jury's verdict that RD-125 was a trade secret. (Def. Br. Supp. Mot. J. Matter L. [Doc. # 511], at 13.) For RD-125 to be a trade secret, it must have "derived independent actual or potential commercial value from not being generally known or readily ascertainable through independent [*110] development or reverse engineering by persons who can obtain economic value from its disclosure or use." N.C. Gen. Stat. § 66-152(3)(a). Factors that may assist a fact-finder in determining whether something is a trade secret include the amount of effort or money expended in developing the information and the ease or difficulty with which the information could properly be acquired or duplicated by others. *See Wilmington Star-News, Inc.* v. *New Hanover Regional Medical Center, Inc.*, 125 N.C. App. 174, 181, 480 S.E.2d 53, 56 (1997).[29]

DeKalb relies on two arguments to support its motion for judgment as a matter of law. First, DeKalb asserts that RD-125 was not a trade secret because it was "functionally indistinguishable" from other transit peptide/EPSPS combinations available at the time. (Def. Br. Supp. Mot. J. Matter L. [Doc. [*111] # 511], at 14.) According to DeKalb, the RD-125 did not possess "some modicum of originality or novelty," (*id.* at 14), because "combinations that did the exact same thing were available elsewhere," (*id.* at 16).

It is true that combining a transit peptide with an EPSPS gene to impart glyphosate tolerance in plants was a technique generally known within the industry. Yet, that knowledge is

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[29] Prior to the start of the trial's second phase, the parties agreed that North Carolina law was the proper law to apply to RPA's trade secret misappropriation claim.

not the secret RPA is attempting to protect. Rather, RPA is claiming as a trade secret the specific combination of the OTP with a maize EPSPS gene that has two precise amino acids mutated. Therefore, it is not persuasive that, prior to RPA's creation of RD-125, others may have performed these same mutations in genes from sources other than maize. (May 17, 1999 Tr. [Doc. # 494], at 228 (DeRose Test.); May 26, 1999 Tr. [Doc. # 499], at 1453-54 (Dewey Test.).) Indeed, Monsanto had performed "hundreds of thousands of mutations" in EPSPS genes prior to 1996. (May 24, 1999 Tr. [Doc. # 498], at 1277 (Padgette Test.).) Yet, it never completed the precise mutations found in RD-125's mutated maize EPSPS gene. (*Id.*) Even as of 1996, a Monsanto scientist who was involved in the company's glyphosate [*112] tolerance research was not aware of the RD-125 combination, even though Monsanto had been working in this area for a decade. (May 21, 1999 Tr. [Doc. # 533], at 1106-11 (Armstrong Test.).) Moreover, no evidence was presented that Monsanto ever combined a double mutated maize EPSPS gene with the OTP. It is the combination of the OTP with the two specific mutations in a maize EPSPS gene that is unique and novel.

Not only is RD-125 original and novel, but also it is distinguishable from other technology because it is the only transit peptide/EPSPS combination that has worked to produce commercially viable, glyphosate tolerant corn seed.[30] At the time of the misappropriation—1996—Monsanto abandoned its most promising line of corn (the "Natalie" line) to adopt the GA21 event containing RD-125, because Natalie showed insufficient levels of glyphosate tolerance. (May 21, 1999 Tr. [Doc. # 533], at 1117 (Armstrong Test.).)

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[30] Although evidence was presented that other factors, such as the rice actin promoter, contributed more than RD-125 to the success of Roundup Ready corn, Dr. DeRose gave credible testimony that "the success of Roundup Ready corn is the combination of the OTP with the maize mutant EPSPS." (May 17, 1999 Tr. [Doc. # 494], at 211.)

Monsanto will not bring another line of glyphosate resistant corn to market until at least 2001, and this line (the NK event) was not even tested until after the misappropriation in December 1996. (*Id.* at 1118.) As North Carolina courts have noted, the difficulty [*113] with which information could be duplicated by others can support a conclusion that the information is a trade secret. *See Wilmington Star-News, Inc.*, 125 N.C. App. at 181, 480 S.E.2d at 56. Therefore, the singular success of Roundup Ready corn, fueled in part by RD-125, gives evidence that RD-125 was different than other such combinations and not readily ascertainable. DeKalb's first claim that RD-125 was readily ascertainable because it was "functionally indistinguishable from other transit peptides" is rejected.

DeKalb's second argument is that there was not substantial evidence to support the jury's verdict that the RD-125 was a trade secret in April 1996, because [*114] DeKalb asserts that the RD-125 previously had been published by DeKalb with RPA's consent in DeKalb's 1995 PCT application (Def.'s Ex. 793). (Def. Br. Supp. Mot. J. Matter L. [Doc. # 511], at 17.)

DeKalb's argument must fail because there is substantial evidence to support the jury's finding that RD-125 did not cease to be a trade secret when DeKalb's PCT application was published. (Verdict Form For Phase 1 [Doc. # 459], at 2.) First, as Dr. DeRose noted, the PCT application only discusses the use of RD-125 as a selectable marker in a petri dish—it does not discuss using it for glyphosate tolerance in corn plants. (May 27, 1999 Tr. [Doc. # 500], at 1775 (DeRose Test.).) Second, the PCT application does not disclose fully the OTP. Rather, it merely describes it as an "optimized transit peptide sequence consisting of sequences from sunflower and maize." (Def.'s Ex. 793, at 108.) Although the OTP patent had been published by 1995, Dr. DeRose testified that the OTP in RD-125 was slightly mutated and thus not revealed in the '471 patent. (May 27, 1999

Tr. [Doc. # 500], at 1774 (DeRose Test.).) Third, the PCT application does not disclose the exact nucleotide sequence of the [*115] double mutated maize EPSPS gene, and Drs. DeRose and LeBrun testified that it would be difficult or impossible for someone skilled in the art to create the double mutant maize gene without the nucleotide sequence. (May 17, 1999 Tr. [Doc. # 494], at 222 (DeRose Test.); May 20, 1999 Tr. [Doc. # 497], at 830 (LeBrun Test.).)

Essentially, DeKalb attempts to argue that after the 1995 PCT application, all of the information necessary to construct RD-125 was in the public domain and "readily obtainable." (Def. Br. Supp. Mot. J. Matter L. [Doc. # 511], at 18.) The original OTP was disclosed in the '471 patent and a later French patent application, published on September 11, 1992 (Def.'s Ex. 1257), it was mentioned in the PCT application, and the specific mutations of the OTP in RD-125 were disclosed separately in a French patent application in 1995 (Def.'s Ex. 1480.)[31] Moreover, DeKalb asserts that the double mutant maize EPSPS gene nucleotide sequence was available in 1995 because the sequence for the native maize EPSPS gene was published in a November 20, 1990 patent by Monsanto (Def.'s Ex. 1450) and the two mutations were published in the PCT application. (Def. Br. Supp. Mot. J. [*116] Matter L. [Doc. # 511], at 18.)

However, DeKalb misunderstands the nature of the inquiry, for "a trade secret can exist in a combination of characteristics and components, each of which, by itself, is in the public domain, but the unified process, design and operation of which, in unique combination, affords a competitive advantage and is a protectable secret." *Glaxo Inc.* v. *Novopharm Ltd.*, 931 F. Supp. 1280, 1300 (E.D.N.C. 1996) (quoting *Syntex Ophthalmics, Inc.* v. *Tsuetaki*, 701 F.2d 677, 684

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[31] DeKalb does not address the typographical errors in the description of the OTP, which Dr. DeRose testified have never been corrected publicly. (May 18, 1999 Tr. [Doc. # 495], at 323-35 (DeRose Test.).)

(7th Cir. 1983)) (internal quotation marks omitted). The jury reasonably could have found that RD-125 would remain a secret even after the various publications of different pieces of it. None of the pieces disclosed that RD-125 could be used in corn plants for glyphosate tolerance. [*117] Moreover, even with Monsanto's publication of the nucleotide sequences of the native maize EPSPS gene, Dr. DeRose testified that it took RPA three-and-one-half years for RPA to isolate and mutate that particular gene. (May 27, 1999 Tr. [Doc. # 500], at 1792.) DeKalb's witnesses testified only that various pieces of RD-125 were disclosed at different points between 1990 and 1995. Yet, none of these disclosures refer to each other, or to the ultimate use of RD-125 in corn. As important, there is no evidence that, in 1996, one skilled in the art who was interested in glyphosate tolerance in corn would know to collect these piecemeal bits of information and to connect them together to recreate RD-125. Indeed, there would be no motivation for such action, because by the time the trade secret actually was disclosed in 1997,[32] only two parties knew that RD-125 worked in marketable, glyphosate-tolerant corn: DeKalb and Monsanto. Thus, the jury could reasonably conclude that neither the DeKalb's 1995 PCT application, nor the various disclosures of pieces of RD-125, disclosed the entirety of RD-125 such that it lost its trade secret status. [*118]

Lastly, even if the PCT application disclosed RD-125, there was sufficient evidence for the jury to conclude that RPA did not provide DeKalb with permission to include RD-125 in its PCT application. (Verdict Form For Phase 1 [Doc. # 459], at 2.) On August 5, 1993, DeKalb requested permission from RPA to publish in a patent application information regarding various constructs RPA earlier had provided to DeKalb. (Def.'s Ex. 595.) DeKalb clearly requested permis-

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[32] *See* Verdict Form for Phase 1 [Doc. # 459], at 2 (jury finding that RD-125 ceased to be a trade secret by February 1997 when RPA's PCT application was published

sion to publish the double mutant maize EPSPS gene in a description of DeKalb's corn transformation process; however, DeKalb's request did not mention that it would publish the specific combination of RD-125 (i.e., the double mutant maize gene connected to the OTP). (*Id.*; May 27, 1999 Tr. [Doc. # 500], at 1773 (DeRose Test.).) As it is this combination that is the trade secret, the jury reasonably could have found that DeKalb's publication in the PCT patent application exceeded the extent of RPA's permission.[33] [*119]

Therefore, DeKalb's motion for judgment as a matter of law on the claim of trade secret misappropriation [Doc. # 510] is DENIED.

III (F)

In the second phase or trial, DeKalb also asserted an inequitable conduct defense to RPA's patent claim, based upon alleged false statements and material omissions in a Declaration filed by Dr. Michel LeBrun, one of the named inventors on the '471 patent. "A patent may be unenforceable due to inequitable conduct if the applicant does not disclose material information to the PTO or submits false material information, with an intent to deceive or mislead the examiner. *Goodyear Tire & Rubber Co.* v. *Hercules Tire & Rubber Co.*, 162 F.3d 1113, 1122 (Fed. Cir. 1998). DeKalb, as the party asserting the inequitable conduct defense, has the burden of proving

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[33] Another problem with DeKalb's "permission" argument is that DeKalb is attempting to rely on DeKalb's own disclosure to assert that RD-125 lost its trade secret status. *See Glaxo Inc.* v. *Novopharm Ltd.*, 931 F. Supp. 1280, 1300 (E.D.N.C. 1996) (noting that "it is true that parties responsible for the dissemination of another's trade secret may not benefit from the disclosure"). Although DeKalb points to RPA's "permission" to publish the construct, it seems that any "permission" must be evaluated in light of the fact that RPA was under the misperception that RD-125 did not work—a misperception caused by DeKalb's own fraud. *See* discussion *supra* Part III(A)(ii). In other words, it is questionable whether any permission granted by RPA to DeKalb under these circumstances is fully informed permission.

materiality and intent by clear and convincing evidence. *See Kingsdown Med. Consultants* v. *Hollister Inc.*, 863 F.2d 867, 872 (Fed. Cir. 1988).

In order for the Court to find the '471 patent unenforceable based upon an alleged material misrepresentation, the Court must first find that the statements about which DeKalb complains are actually misrepresentations, made [*120] with knowledge of their falsity. *See Hebert* v. *Lisle Corp.*, 99 F.3d 1109, 1116 (Fed. Cir. 1996) ("A holding of unenforceability based on the filing of a false oath requires that the oath was false, and made with knowledge of the falsity. Knowledge of falsity is predicate to intent to deceive.") (citation omitted). Then, the Court must determine whether any misrepresentations or omissions meet a threshold level of materiality. The Court also must determine whether the evidence shows "a threshold level of intent to mislead the PTO." *Baxter Int'l, Inc.*, v. *McGaw, Inc.*, 149 F.3d 1321, 1327 (Fed. Cir. 1998). Only if the threshold levels of materiality and intent are established by clear and convincing evidence, are materiality and intent weighed together. *See id.* The more material the misrepresentation or omission, the less evidence of intent will be required in order to find that inequitable conduct has occurred. *See id.* Finally, "in light of all the circumstances, the court must then determine whether the applicant's conduct is so culpable that the patent should be held unenforceable." *Id.*

The first application for what became the '471 patent [*121] was filed on March 4, 1992. (Pl.'s Ex. 963, at 19.) In October 1992, the patent examiner rejected claims 1 through 6 and 12, as obvious over certain prior art, including the Journal of Biological Chemistry article ("Comai article"). (Pl.'s Ex. 963, at 102, 107.) The applicants responded by, among other things, deleting claims 1 through 12 and substituting new claims 25 through 37. (Pl.'s Ex. 963, at 125.) In July 1993, the examiner issued a second office action rejecting these new claims for obviousness over the Comai article

again, as well as another piece of prior art. (Pl.'s Ex. 963, at 142, 147.) On January 18, 1994, the applicant responded with Claim 38, the claim which would ultimately become Claim 11 and which is the subject of the instant litigation. (Pl.'s Ex. 963, at 156; May 19, 1999 Tr. [Doc. # 496], at 588 (Fiorito Test.).) Claim 38 was rejected as obvious on September 13, 1994 over, again, the Comai article and another piece of prior art.[34] (Pl.'s Ex. 963, at 230-32.)

The examiner met with a representative from RPA on January 24, 1995. (Pl.'s Ex. 963, at 235.) According to the examiner's notations, she told the RPA representative that "evidence in the form of [*122] a Declaration showing unexpected properties of construct with two transit peptides may overcome [103 rejection]. . . No commitment to patentability was made." (*Id.*) On June 6, 1995, the examiner rejected Claim 38, among other claims, over the Comai article. (Pl.'s Ex. 963, at 244-47). The examiner cited no other relevant prior art. The examiner's rejection and comments were forwarded to Dr. LeBrun. (May 18, 1999 Tr. [Doc. # 495], at 436-37.) Dr. LeBrun prepared a Declaration pursuant to 37 C.F.R. § 1.132,[35] in which he attempted to respond to the

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[34] It should be noted that the PTO, in each of these office actions, also rejected many of the same claims as indefinite under *35 U.S.C. § 112*. [*123]

[35] Section 1.132 states that

> when any claim of an application or a patent under reexamination is rejected on reference to a U.S. patent which substantially shows or describes but does not claim the same patentable invention, as defined in § 1.601(n), on reference to a foreign patent, on reference to a printed publication, or on reference to facts within the personal knowledge of an employee of the Office, or when rejected upon a mode or capability of operation attributed to a reference, or because the alleged invention is held to be inoperative, lacking in utility, frivolous, or injurious to public health or morals, affidavits or declarations traversing these references or objections may be received.

examiner's comments and rejections by comparing the invention with the prior art found in the Comai article. He signed the Declaration on August 28, 1995. This was his last act as an RPA employee, as he left RPA's employ three days later. (*Id.* at 437-38.) The examiner thereafter issued a Notice of Allowability on October 23, 1995. (Pl.'s Ex. 963, at 304.) The patent application was published on April 23, 1996. (Pl.'s Ex. 6.)

DeKalb asserts that the LeBrun Declaration[36] contains both material misrepresentations as well as a material omission. (Def. Mem. L. Supp. Inequitable Conduct Defense [Doc. # 503], at 7-18.) Evidence regarding these claims was heard by the same jury that heard the trade secret and obviousness issues in the second trial, although for this issue, [*124] the jury was sitting in an advisory capacity. At the end of that evidence, the jury made several findings regarding DeKalb's claims. DeKalb's specific claims, the jury's findings, and the Court's conclusions are discussed below.

III (F) (i)

DeKalb first claims that Dr. LeBrun's statements in Paragraph Six of his Declaration were false and misleading. In Paragraph Six, Dr. LeBrun stated that

> 6. The nucleic acid constructs of the present invention which code for two uniquely positioned chloroplast transit peptides are able to localize a gene product into a chloroplast of a plant cell. A nucleic acid construct coding for a single transit peptide from a sunflower ribulose-1,5 bisphosphate carboxylase small subunit (ribulose-1,5 bisphosphate carboxylase small subunit is hereinafter referred to as "SSU") fused to a heterologous gene is also able

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37 C.F.R. § 1.132.

[36] The LeBrun Declaration is Exhibit 20 of Plaintiff's Exhibit 963. Hereinafter, it will be cited as "LeBrun Decl."

> to localize a gene product into a chloroplast of a [*125] plant cell but with a much lower efficiency than the constructs of the present invention. A nucleic acid construct coding for a single transit peptide from a sunflower SSU and 22 amino acids of the mature N-terminal region of a maize SSU is also less efficient than the claimed constructs of the present APPLICATION in expressing and transporting the aroA gene product and also results in an amino-terminal extension of the aroA gene product. These findings are illustrated in Exhibit 2.

(LeBrun Decl. P 6, at 3.) In Paragraph Seven, Dr. LeBrun fully explains Exhibit 2 to the Declaration, which depicts a "Western analysis" (or "Western Blot") test. (*Id.* P 7, at 3-4; May 26, 1999 Tr. [Doc. # 499], at 1491 (Dewey Test.).)

DeKalb asserts that the Western Blot test described in Exhibit 2 was not conducted in a manner that would produce "quantitative data." (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. # 503], at 8.) Therefore, according to DeKalb, LeBrun's statement in Paragraph Six that the claimed transit peptide is more efficient than the prior art is a material misrepresentation, because the Western Blot provided no evidence of increased quantitative efficiency [*126] over the prior art. (*Id.* at 9.)

The jury disagreed with DeKalb's assessment of Paragraph Six, as it found that DeKalb did not prove that "Dr. LeBrun made a positive assertion of fact that the Western Blot results shown in Exhibit 2 demonstrated that the transit peptide of the prior art had a lesser quantitative efficiency than the OTP." (Phase Two Verdict Form [Doc. # 464], at 1.) The Court adopts this finding by the jury because there is substantial evidence to support this conclusion. *See Hupp* v. *Siroflex of Am.*, 122 F.3d 1456, 1465 (Fed. Cir. 1997). Moreover, the Court determines that, even if the sentences made in Paragraph Six can be read as statements of fact, the facts disclosed by Dr. LeBrun were not misleading or false.

The Court reaches this conclusion because it determines that Paragraphs Six and Seven of the Declaration are meant to be read together; whereas DeKalb's argument requires that the two paragraphs be read in isolation from one another. At the end of Paragraph Six, Dr. LeBrun mentions that "these findings are illustrated in Exhibit 2." Immediately thereafter in the beginning of Paragraph Seven, Dr. LeBrun begins explaining the Western [*127] Blot test in Exhibit 2, which provides qualitative results regarding the size of the protein in the chloroplast. There is no debate that Paragraph Seven accurately and fully describes the test results from the Western Blot test in Exhibit 2, and Dr. Dewey agreed that Paragraph Seven is the only paragraph that describes or explains the Western Blot test. (May 27, 1999 Tr. [Doc. # 500], at 1660.) Indeed, Dr. Dewey agreed that the Western Blot test is a typical test for scientists conducting microbiology work, and according to the description in Paragraph Seven, the test in Exhibit 2 was conducted in a manner consistent with the way Western Blot tests are normally run in laboratories. (*Id.* at 1658.) Dr. Dewey did not find anything in Paragraph Seven to be false or misleading, and he agreed with all three conclusions reached by Dr. LeBrun in Paragraph Seven. (*Id.* at 1658-60.) Indeed, DeKalb's expert testified that if Paragraphs Six and Seven are read together carefully, any person skilled in the art would conclude that Exhibit 2 did not attempt to show any quantitative measurement. (June 1, 1999 Tr. [Doc. # 472], at 101.) Dr. Dewey further agreed that "anyone reading Paragraph [*128] 6, and even if that person interpreted Paragraph 6 to mean something about quantitative measurement, upon reading the rest of the declaration and specifically the following paragraph, would recognize that there was no quantitative measurements attempted in this test." (*Id.*) Therefore, the Court finds that DeKalb did not demonstrate that Paragraph Six stated as a fact that the claimed product had a higher "quantitative efficiency" than the prior art as a result of the Western Blot tests in Exhibit 2. Rather, Exhibit 2 is fully explained in Paragraph Seven,

which was meant to be read in conjunction with Paragraph Six. DeKalb did not meet its burden of proof that Dr. LeBrun made any false statements in Paragraph Six.

III (F) (ii)

DeKalb next claims that Dr. LeBrun failed to disclose certain test results in Paragraphs Eight through Ten. (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. # 503], at 11-14.) These paragraphs discuss the results from "Calli tests," (or "agrobacterium" tests), located in Exhibit 4 to the Declaration, in which the weight of transformed explants were compared after one month of exposure to glyphosate in a petri dish. A higher weight indicates more [*129] glyphosate tolerance. (May 26, 1999 Tr. [Doc # 499], at 1498 (Dewey Test.).) Three results were presented in Exhibit 4: from an untransformed control; from "the 294 construct," which contained a transit peptide, a twenty-two amino acid N-terminal extension, and the aroA gene; and from "the 410 construct," which corresponded to the claimed invention and which contained a transit peptide, a twenty-two amino acid N-terminal extension, a second transit peptide, and the aroA gene. The untransformed control weighed 5 grams, the 294 construct weighed 12 grams, and the 410 construct weighed 34 grams. (LeBrun Decl. Ex. 4.) In Paragraph 10, Dr. LeBrun concluded that the higher weight of the 410 construct clearly shows "the improved efficiency of the fusion protein of the present invention in increasing glyphosate tolerance in transformed explants. The improved glyphosate resistance of plants transformed with [the 410 construct] is due to either increased efficiency of import of the aroA protein or increased efficiency of the native sized aroA protein compared with the 'extended' aroA protein of the prior art, or both." (LeBrun Decl. P 10, at 5.)

DeKalb asserts that Dr. LeBrun [*130] should have disclosed results from other constructs that were tested at the same time as the 294 and 410 constructs, specifically the 297 construct, which contained a transit peptide and thirty-three

amino acids connected to the aroA gene. (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. # 503], at 11-12.) However, the jury found that DeKalb did not prove by clear and convincing evidence that Dr. LeBrun "failed to disclose test results related to construct 297 in paragraphs 8 through 10, with the intent to deceive or mislead the patent office examiner." (Phase Two Verdict Form [Doc. # 464], at 2.)

The Court finds that the test results from constructs other than the 410 construct and the 294 construct were not material. The starting point in determining materiality is the PTO regulations. *See Critikon, Inc.* v. *Becton Dickinson Vascular Access, Inc.*, 120 F.3d 1253, 1257 (Fed. Cir. 1997). The Patent Office regulations state:

> (b) . . . information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and
>
> (1) It establishes, by itself or in combination with other information, [*131] a prima facie case of unpatentability of a claim; or
>
> (2) It refutes, or is inconsistent with, a position the applicant takes in:
>
> (i) Opposing an argument of unpatentability relied on by the Office, or
>
> (ii) Asserting an argument of patentability

37 C.F.R. § 1.56. The entire purpose of the Declaration was to respond to the examiner's objections related to the Comai article prior art and to ascertain the effect of the invention's second transit peptide.[37] The best method of responding to

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[37] For example, in Paragraph Sixteen of the Declaration, Dr. LeBrun summarizes the findings from Paragraphs Five through Twelve, by stating that

> the present invention, exemplified by nucleic acid constructs containing two uniquely positioned SSU chloroplast transit peptide sequences, results in a more efficient expression of the aroA gene than [the 294 construct] modeled after fusion 3 of

these objections was to compare directly the claimed invention with the Comai prior art. Indeed, in the Amendment to the Application that accompanied Dr. LeBrun's Declaration, the applicants expressly state that the 294 construct is modeled after the Comai prior art. (Pl.'s Ex. 963, at 254.) The Comai prior art consisted of a transit peptide connected to a twenty-four amino acid N-terminal extension. Of all of the constructs Dr. LeBrun tested, no other construct more closely resembled the Comai prior art than the 294 construct, which contained a transit peptide and a twenty-two amino acid N-terminal extension. (May 19, 1999 Tr. [Doc. # 496], at 526 (LeBrun Test. [*132]); May 27, 1999 Tr. [Doc. # 500], at 1662-63 (Dewey Test.).) The 410 construct also contained a transit peptide and a twenty-two amino acid N-terminal extension. In addition, the 410 construct has the second transit peptide that the inventors claimed differentiated it from the prior art.

In contrast, the 297 construct that was omitted had an N-terminal extension that was thirty-three amino acids in length and did not have [*133] a second transit peptide. DeKalb argues that a comparison between the 410 and the 297 was necessary because the 297 was "Comai-like," meaning that it had one transit peptide attached to an N-terminal extension. Yet, the difference in N-terminal extension length between the 297 and the 410 and 294 is important, because Dr. Dewey testified that one could not predict that the N-terminal regions of one transit peptide of one length would function in a manner similar to an internal portion of a transit peptide of a different length. (May 27, 1999 Tr. [Doc. # 500], at 1701-03.) Comparing the 297 construct, with thirty-three amino acids, with either the 410 or the 294 construct, each with

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> Comai, et al. Moreover, the aroA gene product produced by the claimed constructs of the APPLICATION do not lead to N-terminal extension of the aroA gene product.
>
> (LeBrun Decl. P 16.)

twenty-two amino acids, would not serve the goal of attempting to ascertain the effect of the second transit peptide contained in the 410 construct. One could not be sure whether the second transit peptide or the additional amino acids caused the test results.

Moreover, DeKalb did not present any evidence that the actual test result from the 297 construct was significant to patentability or inconsistent with the applicant's position of superior results. The 297 construct weighed 27 grams, which indicates [*134] that the 410 construct is roughly 25% more effective than the 297 construct. (June 1, 1999 Tr. [Doc. # 472], at 113 (Dewey Test.).) Finally, the argument for the materiality of the 297 construct's results is undermined by the fact that nothing in the prior art contains the thirty-three amino acid N-terminal extension found in the 297 construct. (June 1, 1999 Tr. [Doc. # 472], at 108 (Dewey Test.).) In contrast, Dr. LeBrun was responding to specific objections from the examiner based upon the Comai prior art. Thus, the results from the 297 construct and other "Comai-like" constructs do not meet the definition of materiality found in 37 C.F.R. § 1.56.

By comparing the two constructs that were most alike, and that most closely resembled the cited prior art, Dr. LeBrun made the most relevant comparison with the prior art that could be made. No other comparison of an available construct with the 410 construct would test only the effect of the second transit peptide, which was the distinguishing feature of the claimed invention. DeKalb did not meet its burden of proof that the omission of the test results of constructs having different N-terminal extension lengths, [*135] including the 297 construct, was material to the Declaration.

III (F) (iii)

Next, DeKalb asserts that Paragraph Eleven of the Declaration contains false and misleading statements about a greenhouse test described in that paragraph. (Def.'s Mem. L.

Supp. Inequitable Conduct Defense [Doc. # 503], at 15.)[38] In Paragraph Eleven, Dr. LeBrun stated that greenhouse tests had been performed comparing the 410 construct with the 294 construct, and that those greenhouse tests showed that the plants containing the 410 construct demonstrated negligible phytotoxicity when compared to the plants containing the 294 construct. (LeBrun Declaration P 11.) The jury found that DeKalb did not prove by clear and convincing evidence that the above statement was knowingly false, or made without regard for its truthfulness. (Phase Two Verdict Form [Doc. # 464], at 2.) [*136]

Again, the Court credits the testimony of Dr. LeBrun, who fully explained the results in Paragraph Eleven. He testified that the greenhouse test that was performed involved treating transformed plants with glyphosate in the greenhouse. (May 19, 1999 Tr. [Doc. # 496], at 483.) After two or three weeks, the plants were examined for several different signs of glyphosate toxification, including reduction in the size of the plant, reduction in the plants' surface area, or some yellowing symptoms. (*Id.* at 483-84.) Together, these "global" observations were called the "phytotoxicity level," which is mentioned in Paragraph Eleven. (*Id.* at 484.) The

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[38] DeKalb's brief contains several other complaints regarding Paragraph 11, including an allegation that Dr. LeBrun failed to disclose material test results that allegedly contradict his statements in Paragraph 11. (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. # 503], at 15.) The Court informed the parties that questions of misrepresentation and intent to deceive would be presented to the advisory jury and that the Court would make findings relating to questions of materiality without submitting them to the jury. DeKalb had ample opportunity to address their questions before the jury and elected not to do so. DeKalb was asked to specify those portions of the Declaration that it identified as constituting inequitable conduct and those issues were placed in interrogatory form and presented to the jury. Those matters which DeKalb now raises post trial relate to issues other than materiality and should have been identified and argued before the jury, which would have had the opportunity to answer discreet question about them. DeKalb has waived these additional objections to Paragraph Eleven of the Declaration.

greenhouse observations were reflected in Defendant's Exhibit 1234. (*Id.* at 485.) Despite DeKalb's allegations, neither the Declaration nor Dr. LeBrun ever stated that all thirty of the transformed plants possessed negligible phytotoxicity. Rather, Dr. LeBrun credibly explained that the results in Paragraph Eleven come from general observations of "plants transformed with [the 410 construct]" as compared to "plants transformed with [the 294 construct]." (LeBrun Decl. P 11.) Finally, Dr. LeBrun's conclusion regarding the superiority [*137] of the 410 construct after the Calli and greenhouse tests also was supported by RPA's subsequent decision to drop work with all other transit peptides. (May 19, 1999 Tr. [Doc. # 496], at 485.) DeKalb did not meet its burden of proof that Dr. LeBrun made any false statements in Paragraph Eleven.

III (F) (iv)

Finally, DeKalb claims that Paragraph Twelve of the Declaration contains false and misleading statements about field tests described in that paragraph. (Def.'s Mem. L. Supp. Inequitable Conduct Defense [Doc. # 503], at 16-18.)[39] In Paragraph Twelve, Dr. LeBrun stated that field tests had been performed comparing the 410 construct with the 294 construct, and that those field tests showed that the plants containing the 410 construct demonstrated negligible (5% or below) phytotoxicity when compared to the plants containing the 294 construct. (LeBrun Decl. P 12.) The jury found that DeKalb did not prove by clear and convincing evidence that the above statement was knowingly false, or made without regard for its truthfulness. (Phase Two Verdict Form [Doc. # 464], at 3.) [*138]

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[39] As with its other objections, DeKalb's brief contains complaints not addressed by the jury, because it was not asked any special interrogatories regarding them. Therefore, as stated above, because DeKalb did not timely object to these issues not being addressed, the Court considers DeKalb's complaints on these issues waived.

Essentially, DeKalb's claims are that the field tests discussed in Paragraph Twelve did not occur and that Dr. LeBrun cited to falsified results from imaginary tests. However, sufficient evidence supports the conclusion that the field tests discussed in Paragraph Twelve did occur. Dr. LeBrun testified credibly at several different points regarding the procedure undertaken during the field tests as well as the results of those field tests. (May 18, 1999 Tr. [Doc. # 495], at 401-06, 430-31, 433-34; May 19, 1999 Tr. [Doc. # 496], at 488-89.) Moreover, documentary support for the tests does exist, despite DeKalb's assertions to the contrary. (Def.'s Ex. 239, at 028387; Pl.'s Ex. 55.) For example, a January 1991 annual report from RPA discussed an aroA gene connected to the OTP and confirmed that RPA still observed phytotoxicity of about 5% after a treatment with Roundup at 800 grams of active ingredient per hectare—the exact result found in Paragraph Twelve. (Def.'s Ex. 239; May 18, 1999 Tr. [Doc. # 495], at 403-04 (LeBrun Test.).) Neither the jury nor the Court was or is persuaded otherwise by the lack of direct documentary evidence of the field trials, given the length of time [*139] between their occurrence and the trial, and the well-documented lack of record-keeping at RPA. (May 17, 1999 Tr. [Doc. # 494], at 160-64 (DeRose Test.); May 19, 1999 Tr. [Doc. # 496], at 486-87 (LeBrun Test.).) DeKalb did not meet its burden of proof that Dr. LeBrun made any false statements in Paragraph Twelve.

III (F) (v)

In addition to the findings made *supra*, the Court ultimately concludes that DeKalb did not meet its burden of proving the separate element of intent to deceive the PTO. "Intent is often inferred from surrounding circumstances when a material misrepresentation is shown." *Glaxo Inc.* v. *Novopharm, Ltd.*, 52 F.3d 1043, 1048 (Fed. Cir. 1995). However, the materiality of a misrepresentation or omission does not lead automatically to an inference of intent to deceive, because intent "is a separate and essential component of in-

equitable conduct." *Molins PLC* v. *Textron, Inc.*, 48 F.3d 1172, 1178 (Fed. Cir. 1995) (quoting *Allen Organ Co.* v. *Kimball Int'l, Inc.*, 839 F.2d 1556, 1567 (Fed. Cir. 1988)) (internal quotation marks omitted). Even when the misrepresentation is in affidavit form, an inference is not required. [*140] *See Glaxo Inc.*, 52 F.3d at 1048. Furthermore, "mere gross negligence is insufficient to justify an inference of an intent to deceive the PTO." *Baxter Int'l, Inc.* v. *McGaw, Inc.*, 149 F.3d 1321, 1329 (Fed. Cir. 1998) (*citing Kingsdown Med. Consultants*, 863 F.2d at 876). Evidence of good faith must be considered in determining whether inequitable conduct has been shown by clear and convincing evidence. *See Baxter Int'l, Inc.*, 149 F.3d at 1330 (*citing Kingsdown Med. Consultants*, 863 F.2d at 876). However, good faith is only one factor to be considered along with the totality of the evidence. *See id.*

First, the Court finds that, even if Paragraph Six contains misrepresentations, Dr. LeBrun did not intend to mislead the PTO with his statements in Paragraphs Six and Seven. He testified credibly at trial that he still believes that the "efficiency of the OTP in conferring resistance to glyphosate is due to the fact that it allows an efficient transport into the chloroplast and the release of a native protein into the chloroplast." (May 18, 1999 Tr. [Doc. # 495], at 434.) Moreover, it was clear from [*141] his testimony that Dr. LeBrun used the term "efficiency" to mean a more global assessment about the qualitative results he received from his testing. (May 19, 1999 Tr. [Doc. # 496], at 555 (LeBrun Test.).) Also, Dr. LeBrun testified credibly that he intended Paragraph Six to be a general introduction to the following paragraphs, and he freely acknowledged that the Exhibit 2 test results from the Western Blot did not provide a quantitative assessment of the claimed construct. (*Id.*) Most important, the ability of a person skilled in the art to read Paragraphs Six and Seven together and conclude that Exhibit 2 did not provide quantitative results, *see* discussion *supra*, leads to the conclusion that these paragraphs were written in good faith

and not written with the intent to deceive the PTO into believing that Exhibit 2 provided results different than what is explained in Paragraph Seven.

Second, even if the results of the Calli tests of other constructs were material, the clear intent of Dr. LeBrun in Paragraphs Eight through Ten was to compare, as accurately as possible, the claimed invention with the examiner's citation to the Comai prior art. Dr. LeBrun testified that [*142] the purpose of the test

was to provide directly comparable results, and by directly comparable I mean a construct having a transit peptide of 55 amino acids from sunflower, then an extension of 22 amino acid [sic] from mature part of the rubisco of maize, and this is 294, compared to OTP which have [sic] in addition a transit peptide from maize. And so we compared the prior art of Comai but strictly to the OTP. It's not a strict comparison with the 297 or 293 [constructs], and that is the reason why we didn't use these results in the patent.

(May 19, 1999 Tr. [Doc. # 496], at 526.) The Court accepts as credible Dr. LeBrun's explanation for his omission of the test results from other constructs.

Third, even if misrepresentations occurred in Paragraphs Eleven and Twelve, it is determined that Dr. LeBrun did not intend to deceive the PTO. At most, his general language about "global" results and observations, as well as the scant documentation of the testing in both the greenhouse and the field, are the result of the practices and procedures inherent in commercial research in France, as testified to by both Dr. LeBrun and Dr. DeRose. (May 17, 1999 Tr. [Doc. # [*143] 494], at 160-64 (DeRose Test.); May 19, 1999 Tr. [Doc. # 496], at 486-87 (LeBrun Test.).) As Dr. LeBrun put it when discussing the greenhouse tests:

The important point is to remind [sic] that this is a dynamic process. What we did was to test hypothesis, and so we made constructs, we transformed plants, we regenerated plants, and we addressed the efficiency of the construct during the

greenhouse test. And the whole idea is to look during a certain time to the evolution of these constructs after treatment and to have [a] global idea of efficiency of the constructs.

> And so it can be not done on loose paper or things like that. The important things is to remember what is the important construct and then afterward you can store this important construct and we can forget the other. It's not important. And we can continue to improve the one we have selected, and this is the case for OTP.
>
> OTP was superior. The other were [sic] not. We continued with OTP, and we forgot the other kind of constructs.

(May 19, 1999 Tr. [Doc. # 496], at 486-87.) Although DeKalb asserts that the lack of documentation leads to an inference of fraud, the Court concludes that a more likely [*144] inference is that RPA simply did not document these tests well. Any mistake that may have found its way into the Declaration based upon these procedures was the result of simple negligence—not the result of an intent to mislead the PTO or even gross negligence.

In sum, for the reasons stated, the Court finds that Dr. LeBrun did not make misrepresentations in Paragraphs Six, Eleven, and Twelve. Moreover, he did not omit any information that was material in Paragraphs Eight through Ten. The Court also finds that the evidence does not clearly and convincingly support a finding that Dr. LeBrun made any assertions or knowingly omitted any information with the intent to deceive the PTO. The Court finds that DeKalb failed to prove inequitable conduct by clear and convincing evidence.

IV. MOTIONS FOR A NEW TRIAL

Under Federal Rule of Civil Procedure 59(a), a new trial will be granted if the verdict "will result in a miscarriage of justice, even though there may be substantial evidence which would prevent the direction of a verdict." *Cline* v. *Wal-Mart*

Stores, Inc., 144 F.3d 294, 301 (4th Cir. 1998) (quoting *Atlas Food Sys. & Servs., Inc.* v. *Crane Nat'l Vendors, Inc.*, 99 F.3d 587, 594 (4th Cir. 1996)) [*145] (internal quotation marks omitted). DeKalb asserts that during the trials the Court made several errors which, singularly or in combination, should entitle DeKalb to a new trial.

IV (A)

DeKalb claims that two prejudicial errors occurring in the first phase warrant a new trial under Fed. R. Civ. P. 59(a).

IV (A) (i)

First, DeKalb argues that RPA "was permitted to present irrelevant and highly prejudicial testimony that DeKalb had not retained certain documents, and then—based on no evidence whatsoever—RPA told the jurors that they could infer fraud from the fact that the documents had been discarded." (Mem. Supp. DeKalb's Mot. New Tr. [Doc. # 509], at 1-2.)

"Under the spoliation of evidence rule, an adverse inference may be drawn against a party who destroys relevant evidence." *Vodusek* v. *Bayliner Marine Corp.*, 71 F.3d 148, 155 (4th Cir. 1995). The inference can be drawn even if the party's destruction of the documents did not occur in bad faith. *See id.* at 156. In this case, the documents were the notes taken by Doug Fisher during the negotiations of the 1994 Agreement. It is clear from the evidence in the case that these documents were [*146] highly relevant to RPA's case of intentional fraud. *See* Fed. R. Evid. 401. Mr. Fisher was the lead negotiator for DeKalb on the 1994 Agreement, and his notes and memoranda from the fall of 1994 certainly are relevant as direct evidence of DeKalb's intent as it entered the agreement. Moreover, the destruction of documents was relevant as indirect evidence of fraudulent intent because of Mr. Fisher's central role in many of the events that formed the basis for RPA's fraud claim: he knew about the field test results; he and Chris Flick arranged the composition of the list of RPA materials to be transferred under the 1994

Agreement, including RD-125; and on September 7, 1994—the same day as Dr. Flick's letter to RPA that asked permission to use RD-125 as a selectable marker in soybeans but failed to mention the Hawaii field trials—Mr. Fisher sent a letter to RPA suggesting that they "move quickly" to finalize the 1994 Agreement, (Pl.'s Ex. 309).

Furthermore, at the time the documents were discarded, it was foreseeable that litigation might eventually envelop the 1994 Agreement. The propriety of DeKalb's acquisition of RPA's technology was an issue in DeKalb's negotiations with [*147] Monsanto in 1996 over rights to RD-125 and other technology. On April 8, 1996, Monsanto required DeKalb to represent formally that DeKalb had rights to RPA's technology under the 1994 Agreement. (Pl.'s Ex. 392, P 1.5(b).) As DeKalb claims that it destroyed the documents in early 1996—in the middle of its negotiations with Monsanto, after allowing the papers to stay in the "chicken coop" for over a year—it is a reasonable inference that DeKalb might have destroyed the papers out of fear of future litigation regarding its acquisition of rights to the technology. *See Kronisch* v. *United States,* 150 F.3d 112, 126-27 (2d Cir. 1998) (holding that an obligation to preserve evidence arises when "a party should have known that the evidence may be relevant to future litigation"). Therefore, allowing RPA to argue to the jury that it should draw an adverse inference from the absence of these relevant documents was proper.[40] n40 DeKalb's motion for a new trial on this ground is DENIED. [*148]

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[40] Moreover, it should be noted that while DeKalb timely objected to the relevance of this information, it did not object contemporaneously to any of RPA's statements regarding inferences the jury may draw from this evidence. Therefore, counsel's statements during closing arguments should be reviewed under a "plain error" standard, which the Court determines is not met. *See United States* v. *Williams,* 152 F.3d 294, 300 (4th Cir. 1998).

IV (A) (ii)

Second, DeKalb complains that the Court's jury instruction regarding DeKalb's waiver of RPA's alleged breach of the 1985/1991 Agreements "failed to specify, as Illinois law requires, that the jury could only find such waiver if DeKalb intended to relinquish its rights." (Mem. Supp. DeKalb's Mot. New Tr. [Doc. # 509], at 2.) A court's failure to give appropriate jury instructions is an adequate basis for granting a new trial. *See, e.g., Furka* v. *Great Lakes Dredge & Dock Co.,* 755 F.2d 1085 (4th Cir. 1985); *Edwards* v. *Mayes,* 385 F.2d 369, 373 (4th Cir. 1967).

Under Illinois law, a waiver is an intentional relinquishment of a known right that may be express or implied from the conduct of the party that has allegedly waived its right. *See Ryder* v. *Bank of Hickory Hills,* 146 Ill. 2d 98, 104-05, 165 Ill. Dec. 650, 652-53, 585 N.E.2d 46, 48-49 (1991). The Court instructed the jury that a waiver occurs "when a party, knowing that the other has committed a breach, elects to accept the benefits of the contract. In other words, a party's continued acceptance of the benefits of the breaching party's performance would constitute [*149] a waiver of the breach." (Ct.'s Jury Instructions [Doc. # 360], at 12.) The essence of DeKalb's complaint is that this instruction did not include the word "intentional." However, by using the words "knowing" and "elects," the Court sufficiently conveyed to the jury that any waiver by DeKalb must be intentional. Putting aside the common sense reading of the instruction's language, one need only turn to Black's Law Dictionary and Webster's Dictionary to find further support. Black's defines "election" as the "act of choosing or selecting one or more from a greater number of persons, things, courses, or rights. . . . The internal, free, and spontaneous separation of one thing from another, without compulsion, consisting in intention and will." Black's Law Dictionary 464-65 (5th ed. 1979). Webster's defines "elect" as "carefully selected: CHOSEN," Webster's Ninth New Collegiate Dictionary 400 (1987), and "choose"

as "to select freely and after consideration," *id.* at 236. Because it is abundantly clear that any election of a course of conduct after knowledge of a breach is, by definition, intentional, DeKalb's motion for a new trial on this ground is DENIED. [*150]

IV (B)

DeKalb further claims that several prejudicial errors occurring during the second phase require the Court to grant its motion for new trial of the patent and trade secret misappropriation claims. (Def. Br. Supp. Mot. New Tr. [Doc. # 513], at 1.) These errors can be divided into three groupings: first, a rehash of DeKalb's complaint regarding its license defense; second, evidentiary rulings; and third, jury instructions.

IV (B) (i)

DeKalb's initial complaint relates to the Court's ruling that, as a matter of law, DeKalb would not be permitted to present its license defense in the second phase of the trial. (*Id.* at 2-9.) The Court has explained this ruling *supra*. *See* discussion *supra* Part III(B). In sum, because of the bifurcation order, which was requested by DeKalb, any evidence regarding an alleged license to this technology should have been presented in the first phase of the trial. The Court has determined that, at the end of the first phase, there was insufficient evidence regarding an alleged license under an implied modification of the 1985/1991 Agreements to present that question to a jury. As DeKalb would not have been allowed to present this issue [*151] to the second jury under the ruling explained in this Opinion, DeKalb was not prejudiced by the manner in which the issue was resolved at trial. Therefore, DeKalb's arguments for a new trial based on the license issue are rejected.

IV (B) (ii)

Next, DeKalb asserts that a new trial should be granted based upon "erroneous prejudicial evidentiary rulings." (Def.

Br. Supp. Mot. New Tr. [Doc. # 513], at 10.) First, the Court must determine whether any of the rulings about which DeKalb complains were erroneous. Second, even if the Court is mistaken regarding its decision on evidentiary rulings, a new trial should be ordered only if the error affects the substantial rights of the parties. Federal Rule of Civil Procedure 61 provides:

> Harmless Error. No error in either the admission or the exclusion of evidence . . . is ground for granting a new trial . . . , unless refusal to take such action appears to the court inconsistent with substantial justice. The court at every stage of the proceeding must disregard any error or defect in the proceeding which does not affect the substantial rights of the parties.

Fed. R. Civ. P. 61. The question, then, for this motion is whether [*152] there was error which "reasonably affected the outcome of the case." *ATD Corp.* v. *Lydall, Inc.*, 159 F.3d 534, 549 (Fed. Cir. 1998). A number of factors have guided the courts in their determinations of whether error is harmless, including (1) whether erroneously admitted evidence was the primary evidence relied upon, (2) whether the aggrieved party was nonetheless able to present the substance of its claim, (3) the existence and usefulness of curative jury instructions, (4) the extent of jury argument based on tainted evidence, (5) whether erroneously admitted evidence was merely cumulative, and (6) whether other evidence was overwhelming. *See id.* at 549-50.

DeKalb asserts that the Court erred in admitting evidence of the "commercial success" of Roundup Ready corn, because it claims that no evidence was presented of the "nexus" between this success and the patented invention, the OTP. As discussed *supra* in Part III(D)(ii), the Court finds that sufficient evidence was presented to conclude that such a nexus existed. Moreover, any error in this regard is harmless, because evidence of commercial success and the other secon-

dary considerations was [*153] not necessary given the Court's conclusion that DeKalb failed to provide evidence of a motivation, suggestion, or teaching in the prior art. *See* discussion *supra* Part III(D)(iii).

DeKalb also objects because the Court did not allow full cross examination of Mr. Bokhart regarding this nexus. This argument is meritless as well. RPA was explicit in stating that Mr. Bokhart was not being offered to demonstrate nexus between the OTP and commercial success. (May 20, 1999 Tr. [Doc. # 497], at 876.) Moreover, Mr. Bokhart was qualified as an expert witness in the fields of accounting and the analysis of financial documents, (*id.* at 880-81), and repeatedly avoided answering questions that delved into the "technological" background of Roundup Ready corn, *(see, e.g.*, May 21, 1999 Tr. [Doc. # 533], at 951-52). Mr. Bokhart provided the opinion that DeKalb was able to charge an extra fee for Roundup Ready corn due to the trait of glyphosate resistance. Other evidence, discussed *supra* in Part III(D)(ii), provided sufficient evidence for the jury to find that the OTP was directly responsible for this trait.

DeKalb further asserts that the Court's exclusion of the "Chretien [*154] memo" (Def.'s Ex. 1467) precluded DeKalb from receiving a fair trial. (Def. Br. Supp. Mot. New Tr. [Doc. # 513], at 13.) According to DeKalb,[41] an RPA patent agent stated in a memo that, after DeKalb's PCT application in 1995, "the gene finds itself in the public domain." (*Id.* at 14.) DeKalb asserted at trial that its purpose in seeking to introduce the Chretien memo was for the jury to draw an inference that, whether RPA wanted it disclosed or not, "the gene"—presumably the double mutant maize gene—was in the public domain as of 1995. (May 18, 1999 Tr. [Doc. #

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[41] As the memo was not introduced into evidence, the Court does not have a complete copy of the memo and is relying on DeKalb's representation of the memo's contents and the transcript of the Court's hearing on this issue.

495], at 281.) However, the Court fails to find any relevance to Mr. Chretien's opinion regarding whether RD-125 was "disclosed" to the public. Mr. Chretien is a French patent agent, not an attorney. The jury had the PCT application, testimony about its purpose, and instructions regarding what constitutes a trade secret and what constitutes disclosure. Allowing the opinion of a non-expert in a form which could not be cross-examined would have provided no assistance to the jury and would have been prejudicial to RPA. *See* Fed. R. Evid. 401, 403.

[*155] TMore importantly, the jury found that DeKalb disclosed RD-125 in the PCT application without RPA's permission. (Verdict Form for Phase 1 [Doc. # 459], at 2.) The Court has found that substantial evidence supported this finding. *See* discussion *supra* Part III(E). Indeed, the Chretien memo itself notes that, in Mr. Chretien's opinion, he thought DeKalb committed itself not to make a disclosure. (May 18, 1999 Tr. [Doc. # 495], at 280.) The lack of permission to disclose renders any inference regarding the actual disclosure of the PCT application irrelevant because even if "the gene" was disclosed in 1995, DeKalb cannot benefit from its own unauthorized disclosure of the gene combined with the OTP. *See* discussion *supra* Part III(E). Therefore, even if the Court was mistaken in excluding the Chretien memo, the error was harmless because it did not effect the outcome of the trial. *See* Fed. R. Civ. P. 61.

Finally, DeKalb objects to the exclusion of Dr. Comai as a witness. (Def. Br. Supp. Mot. New Tr. [Doc. # 513], at 15-16.) The Court finds that the problems surrounding Dr. Comai's testimony, including prejudice to RPA because DeKalb had never identified him as a [*156] possible witness prior to trial, jury confusion, duplicative testimony, and relevance, were fully aired at trial. (May 21, 1999 Tr. [Doc. # 533], at 908-39.) The Court's view remains that Dr. Comai's testimony does not survive the balancing of Federal Rule of Evi-

dence 403, for the reasons stated at the hearing on May 21, 1999.

The evidentiary rulings about which DeKalb complains did not prejudice substantial rights of the parties or result in a miscarriage of justice.

IV (B) (iii)

DeKalb's last set of arguments involves claims that three jury instructions were so erroneous as to require a new trial. Improper instructions, of course, may be grounds for a new trial. *See*, e.g., *Harwood* v. *Partredereit AF 15.5.81*, 944 F.2d 1187, 1192 (4th Cir. 1991). However, instructions must be viewed in their entirety, and a new trial is appropriate only when it is clear that error in the instructions as a whole was such as to have misled the jury. *See Railroad Dynamics, Inc.* v. *A. Stucki Co.*, 727 F.2d 1506, 1518 (Fed. Cir. 1984). The Court finds that the jury instructions about which DeKalb complains are all correct statements of the law, and that as a whole, [*157] the jury was duly charged regarding the essential elements of the claims and defenses in this case.

The first complaint is that the Court refused to allow DeKalb to argue that the Patent Office's determination of nonobviousness should not be granted deference because it was based upon the LeBrun declaration, which DeKalb asserts was fraudulent. (Def. Br. Supp. Mot. New Tr. [Doc. # 513], at 16-18.) Moreover, imbedded in this complaint is DeKalb's further objection that it should have been allowed to present evidence that "RPA's patent issued because of the fraudulent LeBrun declaration." (*Id.* at 18.) The thrust of DeKalb's instruction and proposed argument to the jury was that the jury should consider whether RPA's rebuttal evidence to the PTO was sufficient to overcome the PTO's initial determination of prima facie obviousness. Such argument is incorrect as a matter of law, for

> the determination of obviousness, vel non, requires that all the evidence be considered together. . . . If

> rebuttal evidence of adequate weight is produced, the holding of prima facie obviousness, being but a legal inference from previously uncontradicted evidence, is dissipated. The objective [*158] evidence of unobviousness is not evaluated for its separate knockdown ability against the stonewall of the prima facie case, but is considered together with all other evidence, in determining whether the invention as a whole would have been obvious to a person ordinary skill in the field of the invention.

Applied Materials v. *Advanced Semi. Materials,* 98 F.3d 1563, 1570 (Fed. Cir. 1996) (citations and quotation marks omitted). Rather than accept DeKalb's erroneous proposition, the Court properly instructed the jury on the appropriate deference to the PTO, the burden of proof, and the Graham factors for consideration of the obviousness issue. (Jury Instructions [Doc. # 460], at 11-17.). Cf. *Al-Site Corp.* v. *VSI Int'l, Inc.,* 174 F.3d 1308, 1323 (Fed. Cir. 1999). The Court's rulings on this matter prevented DeKalb from presenting confusing evidence of the PTO's decision, when that decision was made under a "preponderance of the evidence" standard and the jury here would be using a "clear and convincing" standard. Moreover, in order to rebut a showing of one of the Graham secondary considerations, the Court allowed DeKalb to present evidence [*159] undermining LeBrun's assertion in his declaration that the invention in the '471 patent demonstrated "new or unexpected properties." In reviewing the transcript of DeKalb's discussion with the Court on this matter, it seems that DeKalb's real complaint on this issue is that the Court did not allow DeKalb to argue its inequitable conduct case to the jury during the phase of the trial that focused on obviousness. (May 26, 1999 Tr. [Doc. # 499], at 1380-1401.) The Court finds this complaint to be untenable as well.

DeKalb also asserts that the Court should have instructed the jury that to be patentable, an invention must be structur-

ally different from the products in the prior art, and that the difference must result from a difference between the manner in which the prior art product functions and the manner in which the claimed invention functions. (Def. Br. Supp. Mot. New Tr. [Doc. # 513], at 18.) The Court finds no support for DeKalb's proposed instruction in the cases it cites. Moreover, the instruction provided by the Court—that the "patent laws do not require an invention to be superior to the prior art in order to be patentable," (Jury Instructions [Doc. # 460], at 13) [*160]—is correct as a matter of law. *See Ryco, Inc.* v. *Ag-Bag Corp.*, 857 F.2d 1418, 1424 (Fed. Cir. 1988) ("Nothing in the patent statute requires that an invention be superior to the prior art to be patentable."). Therefore, the Court rejects DeKalb's argument on this point.

DeKalb's last objection to the jury instructions relates to the Court's wording of its instruction regarding trade secret misappropriation. (Def. Br. Supp. Mot. New Tr. [Doc. # 513], at 19.) As with DeKalb's argument regarding the Court's use of the words "knowing" and "elects" instead of "intentional," *see* discussion *supra* Part IV(A), this complaint is nothing more than post hoc argument about the choice of words that ultimately convey the same substantive meaning to the jury. This complaint is also rejected.

The objections advanced by DeKalb do not warrant a new trial. DeKalb's motion for a new trial on the patent and trade secret claims [Doc. # 512] is DENIED.

V. LEGAL AND EQUITABLE RELIEF

The foregoing conclusions compel the following rulings regarding the remedies available to RPA. First, the Court will rescind the 1994 Agreement. Second, the Court will enter Judgment for [*161] RPA for $ 1 in nominal damages and for $ 15 million for unjust enrichment based upon DeKalb's fraud. *See* discussion *infra* Part V(A). Third, the Court will enter Judgment for RPA for $ 50 million for punitive damages. *See* discussion *infra* Part V(B). Fourth, the Court will

enter Judgment for RPA on its trade secret misappropriation claim and its patent infringement claim. It is the Court's understanding that DeKalb and RPA have entered into a stipulation regarding damages from these claims. Fifth, the Court will issue a permanent injunction upon DeKalb regarding its use of the '471 patent, the parameters of which will be explained in a separate Order, filed contemporaneously herewith. *See* discussion *infra* Part V(C). Sixth, the Court will deny DeKalb's motion for a stay of the permanent injunction; however, the Court will stay the imposition of the injunction for thirty days from the filing of this Opinion in order to allow DeKalb the opportunity to appeal the denial of its motion for a stay. *See* discussion *infra* Part V(D). Seventh, the Court will deny RPA's motions for attorneys' fees, increased damages, and special equitable remedies. *See* discussion [*162] *infra* Part V(E).

V (A)

The jury awarded RPA $ 15 million based upon unjust enrichment. This verdict does not contradict North Carolina law, is in accord with general principles of restitutionary remedies, and is supported by substantial evidence.

DeKalb asserts that RPA, having been granted rescission, should not be allowed to recover for unjust enrichment as well. (Def. Reply Mem. [Doc. # 506], at 8.) This argument relies on North Carolina's doctrine of election of remedies, whereby "a party alleging fraud must elect either the remedy of rescission or that of damages, but may not seek both, as these remedies are inconsistent." *Mehovic* v. *Mehovic*, 133 N.C. App. 131, 514 S.E.2d 730, 733 (N.C. Ct. App. 1999) *(citing Parker* v. *White*, 235 N.C. 680, 688, 71 S.E.2d 122, 128 (1952)); *see also Bernard* v. *Central Carolina Truck Sales, Inc.*, 68 N.C. App. 228, 231, 314 S.E.2d 582, 585 (1984). One who elects rescission "may recover back what he has parted with under [the contract], but cannot recover damages for the fraud." *Mehovic*, 514 S.E.2d at 733 (quoting *Parker*, 235 N.C. at 688, 71 S.E.2d at 128) [*163] (internal

quotation marks omitted). However, the election of remedies rule does not preclude an award based upon unjust enrichment, for the unjust enrichment award is a restitutionary measure—not a measure of "damages" from the contract or the fraud. *See* 1 Dan B. Dobbs, Law of Remedies § 4.1(1), at 557 (2d ed. 1993) (noting that "*restitution* is not *damages*; restitution is a restoration required to prevent unjust enrichment"). An award based upon unjust enrichment, then, requires DeKalb to disgorge the profits it made from its fraudulent actions. It is based upon DeKalb's illicit gains—not damage to RPA as a result of the fraud.

Although North Carolina courts have not addressed whether an award based on unjust enrichment would be proper in a fraud case such as the instant matter, in which an item received through fraud had increased in value during the time between the fraud and the rescission,[42] it is likely that North Carolina courts would allow an unjust enrichment award under these circumstances. Rescission does not limit a defrauded party only to return of the property that was defrauded. Cf. *Lumsden* v. *Lawing*, 117 N.C. App. 514, 518, 451 S.E.2d 659, 662 (1995) [*164] (acknowledging that the rule that rescission requires a return to the status quo ante is a general rule, not an absolute one). North Carolina courts have

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[42] In *Kee* v. *Dillingham*, 229 N.C. 262, 49 S.E.2d 510 (1948), the North Carolina Supreme Court did allow for a plaintiff to recover "special damages" if "rescission of the contract does not place the injured party in status quo, as where he has suffered damages which cancellation of the contract cannot repair." *Id.* at 265, 49 S.E.2d at 512. However, special damages are still measures of contractual "damages," and therefore do not, by definition, include restitutionary measures such as unjust enrichment. *See Lumsden* v. *Lawing*, 107 N.C. App. 493, 502, 421 S.E.2d 594, 599 (1992); *Canady* v. *Mann*, 107 N.C. App. 252, 256-57, 419 S.E.2d 597, 600 (1992) (*citing* Black's Law Dictionary 469 (4th ed. 1951), which defines "special damages" as damages that "are the actual, but not the necessary, result of the injury complained of, and which in fact follow it as a natural and proximate consequence in the particular case, that is, by reason of special circumstances or conditions").

acknowledged that, as part of a rescission order, RPA is entitled to "full restitution" for the license it provided DeKalb in the 1994 Agreement. *See Opsahl* v. *Pinehurst, Inc.*, 81 N.C. App. 56, 65, 344 S.E.2d 68, 74 (1986). In fact, at least one North Carolina court has gone farther than awarding unjust enrichment damages by allowing punitive damages in a case involving rescission of a contract, which implies an openness to consider the equities of a situation involving intentional fraud. *See Mehovic*, 514 S.E.2d at 733. [*165]

Importantly, an award based upon unjust enrichment comports with general principles of damages and remedies as well. As Professor Dobbs states,

> [a] rescission is an avoidance of a transaction. Rescission will normally be accompanied by restitution on both sides. Rescission is thus less a remedy and more a matter of the conceptual apparatus that leads to the remedy: the contract is being unmade, so restoration of benefits received under the contract seems to follow.

1 Dobbs, *supra* § 4.3(6), at 614; *see also Lumsden*, 117 N.C. App. at 518, 451 S.E.2d at 662 ("Rescission of a contract implies the entire abrogation of the contract from the beginning.").

In cases involving fraud, the defrauded party "is entitled to have restitution of all values which he transferred in the transaction as a result of the misrepresentation." 2 Dobbs, *supra* § 9.3(4), at 593. In a claim based on actual fraud, such as the instant case, part of the "value" calculation includes profits the fraudulent party received from its actions. Indeed, courts normally award as restitution "all unique tangible and intangible property transferred to the defendant if it is capable [*166] of specific return, and if that property is still in the defendant's hands, . . . *and* . . . any benefits defendant derived from the use of the property or intangibles transferred . . . as may be appropriate." *Id.* at 593-94 (emphasis added). The Restatement (Second) of Contracts § 376 (1981) recog-

nizes the right of a party that is defrauded to rescind a contract and sue for restitution "for any benefit he has conferred on the other party," including the fraudulent party's profits. An illustration in the Restatement is analogous to the instant case:

> A fraudulently induces B to make a contract to sell a tract of land for $ 100,000. After B has conveyed the land and A has paid the price, A farms the land at a net profit of $ 10,000. B then discovers the fraud, disaffirms the contract for misrepresentation, tenders back the $ 100,000, and sues A for specific restitution plus the $ 10,000 profit that A made by farming the land. B can recover the land and $ 10,000 in restitution from A.

Restatement (Second) of Contracts § 376 illus. a(5) (1981).

The seminal case involving this notion of awarding unjust enrichment to a defrauded party based upon [*167] the increase in value of the defrauded property is *Janigan* v. *Taylor*, 344 F.2d 781 (1st Cir. 1965).[43] In Janigan, the defendant induced plaintiffs to sell their stock by fraudulent concealment of inside information. Two years later, the stock had increased in value dramatically. Although it was speculative whether the plaintiffs would have profited in the same way had they retained the stock, the court held that they could recover the defendant's profits to prevent the defendant's unjust enrichment. *Id.* at 786. The court distinguished between cases in which, by fraud, "one is caused to buy something that one would not have bought or would not have bought at that price," and cases in which "the property is not bought from, but sold to the fraudulent party." *Id.* at 786. [*168]

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[43] Although Janigan arose under federal securities laws, "state-law fraud remedies produce the same kind of results, with the plaintiff recovering the defendant's market price gain at a much later date." 2 Dobbs, *supra* § 9.3(4), at 598-99.

In the latter case, which aptly describes the instant case, it is appropriate to consider awarding the defrauded party "future accretions not foreseeable at the time of the transfer," even though they may be speculative, because they accrued to the fraudulent party. *Id.*

> There can be no speculation but that the defendant actually made the profit and, once it is found that he acquired the property by fraud, that the profit was the proximate consequence of the fraud, whether foreseeable or not. It is more appropriate to give the defrauded party the benefit even of windfalls than to let the fraudulent party keep them. We may accept defendant's position that there was no fiduciary relationship and that he was dealing at arm's length. Nonetheless, it is simple equity that a wrongdoer should disgorge his fraudulent enrichment.

Id. (citation omitted). In short, the court "fashioned relief to prevent the wrongdoer from the windfall benefit of his wrongful conduct." *Estate of Jones* v. *Kvamme,* 449 N.W.2d 428, 432 (Minn. 1989).

The same principle applies to this matter. In the instant case, DeKalb has made a great deal of money because of its fraudulent [*169] use of RD-125 since 1994. An award of "full restitution," *Opsahl,* 81 N.C. App. at 65, 344 S.E.2d at 74, must take into account the enormous increase in the value of RD-125 in the years after DeKalb received its license fraudulently. It would be neither equitable nor just simply to rescind the 1994 Agreement and to abrogate DeKalb's license to RD-125, while also allowing DeKalb to keep the proceeds of those ill-gotten gains. DeKalb should not be allowed to profit from its wrongful use of RPA's property.

In order to determine how much DeKalb unjustly benefitted from its use of RD-125,

> the court must resort to general considerations of fairness, taking into account the nature of the defendant's wrong, the relative extent of his or her contri-

> bution, and the feasibility of separating this from the contribution traceable to the plaintiff's interest. . . . The more culpable the defendant's behavior, and the more direct the connection between the profits and the wrongdoing, the more likely that the plaintiff can recover all defendant's profits.

Earthinfo, Inc. v. *Hydrosphere Resource Consultants, Inc.*, 900 P.2d 113, 119 (Colo. 1995). The jury [*170] considered substantially similar factors in reaching its $ 15 million verdict for unjust enrichment. The Court instructed the jury that

> unjust enrichment is a very broad and flexible doctrine recognized in the law. It has as its basis the principle that it is contrary to equity and good conscience for a defendant to retain a benefit which has come to him at the expense of the plaintiff. It's [sic] three basic requirements are (1) that the defendant was benefitted, (2) that the defendant unjustly did not pay the plaintiff for the benefits, and (3) that the failure of payment was to the plaintiff's detriment. In considering whether the doctrine should be applied in a particular case, all the facts must be examined to determine whether the circumstances render it "just or unjust, equitable or inequitable, conscionable or unconscionable," to apply the doctrine. The appropriate remedy when a party has been unjustly enriched at the expense of another is to award the injured party all of the profits attributable to the unjustly retained benefit.

(Jury Instructions [Doc. # 370], at 1.) The jury was directed to consider "in what amount, if any, RPA has proven DeKalb's profits [*171] were attributable to use of the RPA double mutant maize EPSPS gene and optimized transit peptide (OTP)." (*Id.* at 2.)

The Court adopts the jury's determination that $ 15 million is an appropriate calculation of the role played by RD-125 in the success of Roundup Ready corn. RPA's RD-125

construct is directly responsible for imparting the glyphosate resistant trait to Roundup Ready corn. *See* discussion *supra* Part III(D)(ii); III(D)(iii). DeKalb charges an additional $ 18 per bag premium for the trait of glyphosate resistance on top of its price for normal, non-glyphosate-resistant corn seed. Christopher Bokhart, RPA's expert witness, testified that in 1998 and 1999, DeKalb would receive almost $ 22 million because of Roundup Ready corn, consisting of $ 8.5 million in trait premiums, (Apr. 13, 1999 Tr. [Doc. # 487], at 196), a subsidy from Monsanto of $ 4.3 million to cover some of DeKalb's growing costs, (*id.* at 198), and incremental sales of corn containing RD-125 of $ 9 million, (*id.* at 200-01). By not granting RPA all of the $ 21.8 million calculated by Mr. Bokhart, the jury's award appropriately credits DeKalb for its role in producing Roundup Ready corn; however, [*172] it also recognizes the substantial evidence that demonstrated that Roundup Ready corn would not be resistant to glyphosate without RD-125.

In sum, rescission is merely the first step in a restitutionary analysis of a fraud claim. The second step is to consider restitution by determining whether the fraudulent party unjustly benefitted from its wrongful conduct. 1 Dobbs, *supra* § 4.3(6), at 614. In this case, the jury determined, and the Court agrees, that RPA is entitled in equity to $ 15 million, due to the unjust enrichment DeKalb received in 1998 and 1999 from perpetrating its fraud in 1994.

V (B)

In North Carolina, punitive damages are allowed to punish a wrongdoer and to deter similar future conduct. Fraudulent conduct alone is sufficient to support an award of punitive damages. *See Newton* v. *Standard Fire Ins. Co.*, 291 N.C. 105, 112-113, 229 S.E.2d 297, 301-302 (1976). Punitive damages may also be awarded in an equitable action for recission when the recission is based upon fraudulent conduct. *See Mehovic*, 514 S.E.2d at 734.

Although North Carolina has now adopted legislation limiting an award of punitive damages to the greater of $ 250,000 [*173] or three times actual damages, that statute, N.C. Gen. Stat. § 1D-25 (1997), did not become effective until the fraud claim in this case had accrued and is to be given no retroactive application. Under the law to be applied in this case, the decision whether to award punitive damages and the appropriate amount of the award is in the discretion of the jury, although, to pass judicial scrutiny, an award must not be so excessively disproportionate to the circumstances of aggravation or outrage justifying the award that due process is offended. *See Maintenance Equip. Co.* v. *Godley Builders,* 107 N.C. App. 343, 352, 420 S.E.2d 199, 204 (1992).

The jury in this case was instructed to consider the following factors in reaching its decision about punitive damages:

> (1) the reprehensibility of DeKalb's motives and conduct; (2) the likelihood, at the relevant time, of serious harm to RPA or others similarly situated; (3) the degree of DeKalb's awareness of the probable consequences of its conduct; (4) the duration of DeKalb's conduct; (5) the actual damages suffered by RPA; (6) any concealment by DeKalb of the facts or consequences of its conduct; (7) the existence and [*174] frequency of any past similar conduct by DeKalb; (8) whether DeKalb profited by the conduct; and (9) DeKalb's ability to pay punitive damages, as evidenced by its revenues or net worth.

(Jury Instructions (3rd Phase) [Doc. # 470], at 2-3.)

These are similar to the factors often cited by courts determining whether a punitive damage award comports with due process. *Cf. Pacific Mut. Life Ins. Co.* v. *Haslip,* 499 U.S. 1, 21-22, 111 S. Ct. 1032, 1045-1046, 113 L. Ed. 2d 1 (1991).

In this case the jury determined that DeKalb had not only initially obtained RD-125 by agreeing to keep RPA apprised of its research progress but also that it had formed and executed a scheme to deceive and mislead RPA by wilfully concealing the actual success of RD-125 in conferring commercial levels of glyphosate resistance in corn. This included the important information that the resistance had been successfully passed from plants regenerated in the laboratory—from cells grown in a petri dish—to the seeds of those plants which, in turn, were planted in a field where they germinated and grew into plants that exhibited resistance to applications of glyphosate up to four times [*175] the normal commercial application. This information was important because it showed the trait could be passed from one generation to another and because seeds retaining the trait were viable and able to grow into plants in an outdoor environment. Both were significant since the introduction of new genetic material, even if successful in initially conferring a desired trait to the cells originally transformed, often affects other necessary traits including the ability to reproduce. Even when a transformed plant has the ability to reproduce, it is unknown whether the desired trait will be transmitted to the next generation or whether the insertion of the new genetic material will alter old traits necessary to the plant's continuing viability.

As a result of this information being concealed, RPA entered into the 1994 agreement without knowledge that RD-125 had any commercial value and—without receiving any consideration[44] for doing so—gave DeKalb an unconditional, paid-up license to use and to sublicense a genetic construct

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[44] While DeKalb contended at trial that it did give some consideration for acquiring the right to use and commercialize RD-125, there was no evidence from which a reasonable fact finder could have determined there was any consideration in addition to that given for rights to the Comai genetic materials originally comprising the subject matter of the agreement.

that accomplished an objective for which much of the worldwide agricultural industry had been searching competitively for a number of years. [*176]

DeKalb, immediately upon completion of the Hawaii field tests, had begun back crossing with its commercial quality lines. Successful back crossing normally takes at least two-and-a-half to three years using the growing seasons in three parts of the world. Since no one else in the industry had discovered a means of conveying glyphosate resistance to corn plants, DeKalb gained a significant jump on all others. While DeKalb was moving toward commercialization, RPA lost its opportunity to negotiate the sale of licenses to others who might have wished to enter the back crossing process in competition with DeKalb. DeKalb, on the other hand, has licensed others including Monsanto, the company which now solely owns DeKalb. The present and future effect of those sublicenses will likely be determined in future litigation; however, one present effect of the Monsanto sublicense is that this Court—on the basis that there was no showing that Monsanto was aware of fraud at the time of acquiring the license—dismissed Monsanto as a defendant in this case.

DeKalb and, subsequently Monsanto, projected Roundup Ready corn not only as a product which would generate much interest and consequent sales [*177] among its normal customers, but as a product which would increase DeKalb's market share in the corn seed industry. Evidence supported a finding that in the first two years of availability $ 22 million in DeKalb corn seed sales was directly attributable to the glyphosate resistant trait. After hearing evidence from DeKalb regarding its costs to produce and market Roundup Ready corn, the jury determined that DeKalb had been unjustly enriched by $ 15 million.

In *BMW* v. *Gore,* 517 U.S. 559, 574-583, 116 S. Ct. 1589, 1598-1603, 134 L. Ed. 2d 809 (1996) the Supreme Court emphasized three factors in determining whether an award is grossly excessive: reprehensibility of the defen-

dant's conduct; the ratio of the award to the actual harm inflicted and the potential harm which might have been inflicted; and a comparison to comparable civil and criminal penalties.

The jury in this case found actual fraud. In dealings between corporations, fraud, which by nature and definition necessarily involves intentional trickery and deceit, stands at the apex of reprehensibility. The fraud here resulted in RPA granting DeKalb an unrestricted, paid up license to use RD-125 and the right to [*178] sublicense others to use RD-125 on a basis different than it would have had it known RD-125 actually worked. This effectively prevented RPA from negotiating with others for similar licenses at a time when those negotiations would likely have been the most profitable and it allowed DeKalb to grant sublicenses, the validity of which are still to be determined, perhaps at considerable expense. The jury determined that DeKalb, unjustly, had received $ 15 million in a two-year period from sales directly attributable to the use of RD-125.

Civilly, in 1994, N.C.Gen. Stat. 75-1.1 provided for treble damages for unfair and deceptive trade practices. *See Hardy* v. *Toler*, 24 N.C. App. 625, 630-31, 211 S.E.2d 809, 813, *modified on other grounds*, 288 N.C. 303, 218 S.E.2d 342 (1975). Criminally, in 1994, obtaining property by false pretenses was a Class H felony punishable by imprisonment up to 10 years and a fine in the discretion of the court. *See* N.C. Gen. Stat. § § 14-100 (1993) (current version at N.C. Gen. Stat. § 14-100 (supp. 1998)), 14-1.1 (1993) (repealed Jan. 1, 1995). On October 1, 1994, structured sentencing laws became effective in North Carolina. [*179] *See* N.C. Gen. Stat. § 15A-1340.10 et seq. (1997). On December 1, 1997, the offense of utilizing false pretenses to obtain property valued at more than $ 100,000 became a Class C felony. *See* N.C. Gen. Stat. § 14-100 and editor's note (supp. 1998). The presumptive sentence in such a case would be 58-73 months of incarceration, and a fine in the discretion of the

court. *See* N.C. Gen. Stat. § 15A-1340.17. A fine "in the discretion of the court" apparently has no recognized limits short of the Eighth Amendment.

In this action, RPA was not seeking compensatory damages but recission of the 1994 agreement and disgorgement of profits. Even so, there is no apparent reason when performing the "ratio" analysis not to use the jury's unjust enrichment award of $ 15 million since that represents sales proceeds directly attributable to the wrongful use of RD-125. Doing so, the ratio to punitive damages is 3.3, a figure well within that allowed in both *Pacific Mut. Life Ins. Co.* v. *Haslip,* 499 U.S. 1, 111 S. Ct. 1032, 113 L. Ed. 2d 1 (1991) and *TXO Prod. Corp.* v. *Alliance Resources Corp.,* 509 U.S. 443, 113 S. Ct. 2711, 125 L. Ed. 2d 366 (1993). [*180] The ratio is fractionally more than that now permitted by N.C. Gen. Stat. § 1D-25 (1997), but certainly not disproportionately excessive in view of the BMW indicia of reprehensibility, relationship to actual and potential harm, and comparison to other civil and criminal sanctions.

V (C)

RPA has submitted a Motion for Entry of a Permanent Injunction [Doc. # 504]. "Infringement having been established, it is contrary to the laws of property, of which the patent law partakes, to deny the patentee's right to exclude others from use of his property." *Richardson* v. *Suzuki Motor Co.,* 868 F.2d 1226, 1246-47 (Fed. Cir. 1989) (*citing* 35 U.S.C. § 261). "It is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it." *Id.* at 1247 (*citing W.L. Gore & Associates, Inc.* v. *Garlock, Inc.,* 842 F.2d 1275, 1281 (Fed. Cir. 1988)). DeKalb has presented no such reason. Although DeKalb argues strenuously that a permanent injunction should not issue because the public interest will be frustrated without access to the patented technology, (Def.'s Mem. Opp. [Doc. [*181] # 524], at 5-10), the Court determines that the public interest has been appropriately considered in

the Court's denial of a stay of this injunction. *See* discussion *infra* Part V(D). The cases cited by DeKalb in this regard are otherwise distinguishable.

DeKalb admitted to infringing the '471 patent through its use of the invention in Claim 11 in Roundup Ready corn, and all of DeKalb's defenses have been rejected. Substantial evidence supported the jury's verdict that Claim 11 of the '471 patent was not invalid due to obviousness. *See* discussion *supra* Part III(D). DeKalb did not provide clear and convincing evidence that the '471 patent is unenforceable due to inequitable conduct. *See* discussion *supra* Part III(F). Therefore, RPA's Motion for Entry of a Permanent Injunction will be GRANTED. The parameters of that injunction will be set forth in an Order filed contemporaneously herewith.

V (D)

DeKalb has requested a stay pending appeal of any injunction issued by the Court [Doc. # 514]. Four factors guide the determination of this motion: "(1) whether the stay applicant has made a strong showing that he is likely to succeed on the merits; (2) whether the [*182] applicant will be irreparably injured absent a stay; (3) whether issuance of the stay will substantially injure the other parties interested in the proceeding; and (4) where the public interest lies." *Standard Havens Prod., Inc.* v. *Gencor Indus., Inc.*, 897 F.2d 511, 512 (Fed. Cir. 1990) (quoting *Hilton* v. *Braunskill*, 481 U.S. 770, 776, 95 L. Ed. 2d 724, 107 S. Ct. 2113 (1987)) (internal quotation marks omitted). Each factor, however, need not be given equal weight, and the formula "cannot be reduced to a set of rigid rules." 897 F.2d at 513 (quoting *Hilton*, 481 U.S. at 777). Indeed, the four stay factors can effectively merge: "in considering whether to grant a stay pending appeal, this court assesses movant's chances for success on appeal and weighs the equities as they affect the parties and the public." 897 F.2d at 512-13 (quoting *E.I. DuPont de Nemours & Co.* v. *Phillips Petroleum*, 835 F.2d 277, 278 (Fed. Cir. 1987) (internal quotation marks omitted)).

The Federal Circuit has suggested using a sliding-scale approach when evaluating motions for a stay: the stronger the showing the stay movant can make on its likelihood [*183] of success on the merits, the less compelling the showing must be with respect to the other three factors. Conversely, if the stay movant can show only a "substantial legal question," then it can obtain a stay only if it prevails on the other three stay factors. *See* 897 F.2d at 513. On the likelihood of success question, DeKalb has reiterated the arguments it made in its motions for judgment as a matter of law and for a new trial. "Although the Court is confident that it ruled correctly on these matters, it cannot fairly be said that none raises a 'substantial legal question.' Equally true, however, is that [DeKalb] has not shown a 'strong likelihood of success on the merits' on any of these issues." *Odetics, Inc.* v. *Storage Tech. Corp.*, 14 F. Supp. 2d 785, 798 (E.D. Va. 1998).

DeKalb would not suffer irreparable injury if an injunction is issued. DeKalb argues that it will lose profits if a stay is denied and this decision is overturned on appeal, particularly because RPA is not required to post a bond to obtain a permanent injunction. (Def. Mem. Supp. Motion Stay [Doc. # 515], at 9.) The Court fails to see how this "injury" differs from the "injury" suffered by [*184] any unsuccessful patent infringement defendant who faces injunctive relief prohibiting future infringement. Given that "it is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it," *Richardson*, 868 F.2d at 1247, the Court must determine that DeKalb has not made a sufficient showing of injury other than to its business interests. Of course, a patent defendant that is forced to stop infringing a patent upon which it has built substantial business often will suffer such injury. *See Windsurfing Int'l, Inc.* v. *AMF Inc.*, 782 F.2d 995, 1003 n.12 (Fed. Cir. 1986) ("One who elects to build a business on a product found to infringe cannot be heard to complain if an injunction against continuing infringement destroys the business so elected."). Certainly, DeKalb has not made a showing of harm that ap-

proaches the showing of "employee layoffs, immediate insolvency, and, possibly, extinction," made by the defendant in *Standard Havens*. *Standard Havens*, 897 F.2d at 515 (warning that Windsurfing International does not overcome the equities of a case nor should it be applied "mechanically" [*185] in a motion for a stay). The Court finds that DeKalb will not suffer "irreparable injury" absent a stay.

While RPA's irreparable harm is presumed in terms of granting a permanent injunction, *see Richardson*, 868 F.2d at 1246-47, a stay in the injunction during the pendency of an appeal would not substantially harm RPA. RPA is already compensated for the bags of corn DeKalb will sell through the 1999 fiscal year. Moreover, RPA and DeKalb, through their stipulated damages, have established a royalty that DeKalb would pay during the course of the injunction should this Opinion be upheld by the Federal Circuit.

> Of course, a stay would amount to compelling [RPA] to grant [DeKalb] a license for the duration of the appeal, thereby depriving [RPA] of the full benefit of its statutory monopoly right to decide whether, when, and to whom to license its ['471] patent—but only for the duration of the appeal. Thus, while significant in the injunction calculus, this harm is not decisive in the stay context. Were this not so, such harm, present in every case, would always preclude issuance of a stay.

Odetics, Inc., 14 F. Supp. 2d at 799. [*186] Moreover, RPA is not yet in the business of producing glyphosate resistant corn seed. Therefore, allowing DeKalb to continue selling Roundup Ready corn during the pendency of the appeal would not threaten any of RPA's current lines of business. *See Standard Havens*, 897 F.2d at 515 (staying injunction because, among other things, plaintiff made no showing of "noncompensable injury such as lost market share"). Over the long term, RPA would be irreparably harmed by the absence of an injunction, but RPA has not shown that it will

suffer substantial injury if the stay is granted for the relatively brief pendency of an appeal.

Finally, the public interest does not support a stay, although it is a close question. Courts have only [illegible] "rare instances" allowed for a stay of a patent injunction because of the public interest. *Rite-Hite Corp.* v. *Kelley Co.*, 56 F.3d 1538, 1547-48 (Fed. Cir. 1995) (citing cases). DeKalb claims that this case falls into that limited category because the public interest would be severely affected if farmers are deprived of the health and environmental benefits of glyphosate herbicides by not being allowed to buy Roundup Ready corn. [*187] (Def. Mem. Supp. Mot. Stay [Doc. # 515], at 4-8.) The evidence from the case and in the affidavits presented along with DeKalb's motion support the notion that the use of glyphosate herbicides—and, correspondingly, of glyphosate-resistant corn seed—provide substantial benefits. However, it is difficult to square this evidence with DeKalb's own arguments during the trial (which was disregarded by the jury) that it was having difficulty even making a profit with Roundup Ready corn. Clearly our farm system has not become so dependent on Roundup Ready corn seed that enjoining its production would undermine the public's interest in "a healthy farming economy and adequate crop yields." (*Id.* at 6.) As stated by RPA, DeKalb's argument overstates the importance of Roundup Ready corn seed to the farm industry because "the fact of the matter is that for decades—centuries, even—farmers have grown corn for public consumption without DeKalb's Roundup Ready corn seed" and "as a general rule the public has been able to consume such corn without encountering negative health effects." (Pl.'s Br. Resp. [Doc. # 529], at 15.)

Balancing this potential harm to farmers, of course, is [*188] the public interest in maintaining the integrity of the patent system. *Odetics, Inc.*, 14 F. Supp. 2d at 799-800 (*citing* 35 U.S.C. § 154). At best, the public interest is a neutral factor in the balancing of harms.

In conclusion, substantial or irreparable harm would not imbue to RPA, DeKalb, or the public if a stay is denied. As DeKalb has not demonstrated a "strong likelihood of success on the merits," the Court will deny its motion for entry of stay of the injunction during the pendency of an appeal. However, the Court will stay the injunction for thirty days after the entry of the Order accompanying this Opinion in order for DeKalb to appeal this ruling regarding the stay to the Federal Circuit.

V (E)

Finally, RPA has moved for further equitable relief [Doc. # 504] and increased damages and attorneys' fees [Doc. # 476]. The Court will deny these motions.

First, RPA has not demonstrated that it has any right to the GA21 event. Second, RPA has not presented "clear and convincing" evidence of willful infringement by DeKalb. "Willfulness is determined from the totality of the circumstances, and must be proven by clear and convincing evidence. [*189] " *Braun Inc.* v. *Dynamics Corp.*, 975 F.2d 815, 822 (Fed. Cir. 1992) (citations omitted). Although RPA has demonstrated intentional, fraudulent acquisition of rights to the OTP by DeKalb, it has done so under a preponderance of the evidence standard. The Court finds that RPA has not met the higher burden of proof required for the imposition of increased damages.

Third, 35 U.S.C. § 285 provides that the court in "exceptional cases may award reasonable attorney fees to the prevailing party." Among the types of conduct which can form a basis for finding a case exceptional are "willful infringement, inequitable conduct before the P.T.O., misconduct during litigation, vexatious or unjustified litigation, and frivolous suit." *Beckman Instruments* v. *LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989). "Such conduct must be supported by clear and convincing evidence." *Id.* Again,

RPA has not demonstrated by clear and convincing evidence that this case should be considered "exceptional."
This the 8th day of February, 2000.

N. Carlton Tilley, Jr.

United States District Judge

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INJUNCTION
TILLEY, Chief Judge

This case is now before the Court on post-trial motions from both parties. One of those motions is Plaintiff Rhone-Poulenc Agro SA's (RPA) motion for a permanent injunction [Doc. # 504]. For the reasons set forth in the Memorandum Opinion filed contemporaneously with this Order, that motion is GRANTED. The purpose of this Order is to establish the scope of the injunction.

IT IS HEREBY ORDERED:

1. DeKalb is permanently enjoined from making any use of the technology covered by United States Patent 5,510,471 ('471 patent).[1] This prohibition means that DeKalb shall neither use that technology in research, nor produce [*191] or sell any products involving that technology. The sole exception to this general rule is set forth below.

2. Because DeKalb may no longer grow or sell the GA21 corn line, any GA21 corn that DeKalb currently has growing

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[1] On December 16, 1999, the Patent Office reissued the '471 patent as RE 36,449 ('449 patent). The '471 patent, therefore, no longer exists. Nonetheless, the Court will continue to refer to the '471 patent, as it was known throughout this litigation. This injunction should be read to apply to the '449 patent, of course.

shall be "turned under" or otherwise destroyed. However, DeKalb may sell any GA21 corn that it had in inventory on June 2, 1999. This provision covers corn in bags on that date, whether it had not yet been sold or had been sold and returned to DeKalb. It does not cover inventory acquired since that date and, consequently, any inventory acquired after June 2, 1999 must be destroyed.

This the 8th day of February, 2000.

N. Carlton Tilley, Jr.

United States District Judge [*192]

APPENDIX D

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

RHONE-POULENC AGRO, S.A., Plaintiff,

vs.

MONSANTO COMPANY and
DEKALB GENETICS CORPORATION, Defendants.

Civil Action No. 1:97CV01138

Greensboro, North Carolina
Tuesday, June 1, 1999
10:10 A.M.

TRANSCRIPT OF TRIAL PROCEEDINGS
BEFORE THE HONORABLE N. CARLTON TILLEY, JR.
UNITED STATES DISTRICT JUDGE

* * * *

[144] THE COURT: That's a good question.

MR. PAZUNIAK: I'm not sure if Your Honor wants to do it now or argue all of this tomorrow morning when we have all of our cases here, but we have filed a motion and brief this morning. Has Your Honor seen it?

THE COURT: I have not .

MR. PAZUNIAK: In which we have pointed to authority for several jurisdictions in which this specific issue was raised, and the cases essentially stated that the court is empowered, in a situation such as this, to say that even though the standard was the preponderance of the evidence in the,

you know, the earlier trial, that the evidence was sufficient to establish clear and convincing or to pass under the clear and convincing standards and, therefore, postulate that as having been and in fact clear and convincing standards.

The thing that has created this problem is DeKalb's and Monsanto's motion to bifurcate. And they asked for bifurcation, said this would help streamline the trial, make things easier. Your Honor agreed to the bifurcation. We went forward with the broad case when we did, took this, you know, took this phase out of that case, and now we're either stuck with having to retry the entire first phase or giving up on punitive damages, and I don't think we are subject to that kind of a Hobson's choice, but it is precisely for this reason -- and we cite the cases and the analysis in the brief we filed [145] today, that courts are allowed to, in effect, transform a preponderance of the evidence.

THE COURT: For a jury?

MR. PAZUNIAK: For a jury.

THE COURT: There are cases which hold that I may, based upon how I receive the evidence, may tell another jury, a second jury, that although the first jury was instructed to and found evidence persuasive by a preponderance, that they should accept this as being a finding by clear and convincing evidence because of my reaction to it? There are cases that say that?

MR. PAZUNIAK: That's what those cases say, Your Honor. We cited the cases in the brief.

THE COURT: I will decline the invitation to do that, simply because I don't view the evidence to have been sufficient to carry the burden by clear and convincing evidence. I do not view it in that light.

MR. PAZUNIAK: That certainly avoids the legal disputes, Your Honor.

THE COURT: So going from there, tell me where you are.

MR. PAZUNIAK: Your Honor, I will have to consult with my co-counsel on that and probably consider -- would tomorrow morning be fine to resume this or --

THE COURT: Well, I expect if that's the best you can do, we can do it -- [146]

MR. PAZUNIAK: Your Honor, in light of what Your Honor just said, I think we need to go back and reconsider certainly our options.

THE COURT: I cannot tell this jury that I found clear and convincing evidence of that. It was a close question. Lest that mark be misinterpreted, I'm certainly not saying there wasn't sufficient evidence from which a jury could have found by a preponderance. That is something I'm sure will be addressed in post-trial motions, and I'm making no finding whatever about that, but I do not find the evidence to have been clear and convincing, where there is no substantial doubt, it simply was not that.

Okay. We'll recess until 9:30 in the morning.

MR. BARBER: Your Honor, one other totally different point. I understand Mr. Pazuniak was negotiating regarding closing argument during my absence at the bench. I want to make sure I understand what he negotiated.

THE COURT: Ten minutes.

MR. BARBER: He knows me well enough by now. I just want to make sure we have a common understanding as to how long these arguments are going to take.

THE COURT: How long do you want to argue?

MR. LYNCH: How long would you like them to go?

MR. BARBER: 30 minutes would be fine.

MR. LYNCH: Twenty-five, 30. That's what I said.

* * * *

APPENDIX E

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

RHONE-POULENC AGRO, S.A., Plaintiff,
v.
DEKALB GENETICS CORPORATION, Defendant.

Civil Action No. 1:97CV01138
April 22, 1999

TRANSCRIPT OF TRIAL PROCEEDINGS
BEFORE THE HONORABLE N. CARLTON TILLEY, JR.
UNITED STATES DISTRICT JUDGE

* * * *

In determining the amount of punitive damages to award, you may consider the following factors as are supported by the evidence: (1) the injury which occurred from the defendant's conduct; (2) the injury which could have occurred from the defendant's conduct; (3) the degree of reprehensibility of the defendant's conduct; (4) the duration of the defendant's conduct; (5) the defendant's awareness of the nature and character of the defendant's conduct; (6) the defendant's awareness of the probable consequences of its conduct; (7) any concealment by the defendant of the facts or consequences of its conduct; (8) the existence and frequency of similar past conduct by the defendant; (9) whether or not the defendant profited from its conduct, and if so, whether that profit should be taken away; and (10) the financial status or position of the defendant.

You may also consider such other factors as arise logically and fairly from the evidence presented

* * * *

APPENDIX F

In The Matter Of:
RHONE-POULENC AGRO, S.A.
v.
MONSANTO COMPANY, ET AL.

Trial Volume Number 13
April 21, 1999

BEFORE JUDGE TILLEY

* * * *

RPA will not be able to point to any misrepresented fact by DeKalb. Well, that's a little tricky because what we're saying is not that they sent us something that said, oh, the test failed. We're saying that they hid the fact that the test worked, so he's correct. There was no active lie that was sent to RPA, but then again that's not what we're—that's not what we're claiming in this suit.

And finally, his last three were essentially why did the left hand not know what the right hand was doing, why didn't the business people ask the scientists? Well, if you think back to Alain Godard's testimony and Scott Johnson's testimony and to Dr. Freyssinet's testimony, the business people did ask the scientists. Mr. Godard had his chief scientists go find out what had happened. He got that information before he signed the agreement. The business people asked the scientists, but the scientists didn't know because DeKalb had hidden it from them. Now, that's the first gaseous ball.

The second gaseous ball is breach of contract by RPA. Mr. Cowan claims that RPA breached the 1985/'91 agreement because of its statement at the Mystic meeting that it

was going to perform no additional work in the area of glyphosate tolerance,

* * * *

OPPOSITION

BRIEF

Supreme Court, U.S.
FILED
AUG 26 2002
CLERK

No. 02-130

IN THE

Supreme Court of the United States

DEKALB GENETICS CORP.,

Petitioner,

v.

BAYER CROPSCIENCE, S.A.,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF IN OPPOSITION

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PARTIES TO THE PROCEEDING AND STATEMENT PURSUANT TO RULE 29.6

The parties to the proceeding before this Court are DeKalb Genetics Corp. and Bayer CropScience, S.A. When the case below was filed in the United States District Court for the Middle District of North Carolina, the plaintiff was named Rhone Poulenc Agrochimie S.A. Rhone Poulenc Agrochimie S.A. was subsequently renamed Rhone Poulenc Agro S.A., which was subsequently renamed Aventis CropScience S.A., which was subsequently renamed Bayer CropScience, S.A. Bayer CropScience S.A. is a "societe anonyme" organized and existing under the laws of France. Bayer CropScience S.A. is owned 84% by Bayer CropScience Holding S.A. and 16% by Bayer CropScience GmbH. Bayer CropScience GmbH is owned 100% by Bayer CropScience Holding S.A., which is owned 100% by Bayer CropScience AG. Bayer CropScience AG is owned 100% by Bayer AG.

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STATEMENT OF THE CASE

Petitioner DeKalb Genetics Corp. ("DeKalb") says little about the underlying intentional fraud it perpetrated against Rhone Poulenc Agrochimie S.A. ("RPA"). DeKalb's fraud was determined by a properly instructed jury, confirmed by a strong decision of the trial judge, affirmed by the Court of Appeals for the Federal Circuit, and is not appealed or contested here.

DeKalb posits its fraud and the resulting punitive damages award as one "based on a single incident of nondisclosure in a business dispute" (Pet. 2). But, the facts recited by the trial judge and the Court of Appeals, which must be accepted here, show a pattern of intentional deceit by DeKalb visited by DeKalb upon a party with whom DeKalb was ostensibly in a joint development relationship.

DeKalb's egregious misconduct necessarily informs the punitive damages issue. Both the District Court and the Federal Circuit carefully reviewed the record evidence of DeKalb's fraudulent wrongdoing, and concluded that punitive damages in the amount found by the jury was warranted under this Court's guideposts for constitutional review of punitive damages awards. Both courts specifically considered and found that DeKalb's fraud was sufficiently reprehensible so that the punitive damages award did not violate DeKalb's Due Process rights, and that the award amount was within the "ratio" and "comparable sanction" boundaries.

To create a constitutional challenge to the punitive award for its admitted misconduct, DeKalb distorts the record of the trial and the decisions below, largely basing its arguments on snippets of sentences taken out of context, while ignoring the most critical facts and law. DeKalb's petition should be denied.

A. Background Facts

In 1991, RPA assumed the rights and obligations of a third party (Calgene, Inc.) under a 1985 agreement with DeKalb to jointly develop corn tolerant to the herbicide glyphosate (marketed as Roundup®). Pet. App. 2a-4a, 42a-43a. RPA developed and provided to DeKalb various novel DNA compositions that would hopefully provide such glyphosate resistance when introduced into corn. DeKalb, in turn, was supposed to "transform" corn cells with RPA's genetic compositions and then grow and test the corn plants for glyphosate resistance. Pet. App. 3a, 43a.

Glyphosate tolerant corn was also the goal of other researchers. Yet, despite the best efforts of the Calgene/RPA/ DeKalb group and the others, no glyphosate tolerant corn had been developed. While some cells and plants could be grown in petri dishes in a laboratory, no DNA composition had been shown to be able to function in the field in real seed-grown corn.

RPA then created a new class of genetic constructs, one of which was called RD-125, which RPA provided to DeKalb in February 1993. DeKalb expressly agreed to report to RPA all results from the DeKalb testing of RD-125. Pet. App. 3a-4a, 44a-45a.

In February 1994, DeKalb reported to RPA that the initial "petri dish" laboratory results with the new RD-125 construct were encouraging. Yet, as the report and all involved recognized, favorable greenhouse results had been seen before, but there was still no seed-grown corn (as opposed to plant grown in a petri dish) that had adequate level of glyphosate tolerance. Only seed-grown corn in the field could demonstrate success, and all such efforts had proven unsuccessful. The key point was

that there was still no evidence that the genes could be transferred to a next generation so as to be grown from seeds in the field. Pet. App. 4a, 45a.

DeKalb's communication was important, however, because it was consistent with DeKalb's pattern and practice of reporting to RPA all results from its experiments with RPA's genetic materials. The consistent course of conduct, plus DeKalb's express agreement to provide results, caused RPA to accept that DeKalb would promptly report all material information as it always had done.

B. DeKalb Defrauds RPA

In the summer of 1994, DeKalb conducted field tests with the above and other "transformation events" that used RPA's RD-125. But, all such field tests failed. However, in March 1994, DeKalb created new "transformation events" with RD-125, which produced seed, which DeKalb tested at its field location in Hawaii. On September 6, 1994, DeKalb scientists, including Dr. Flick of DeKalb, received results from the tests. Those tests demonstrated that several of the "transformation events" had produced seed-grown corn plants in the field that were resistant to up to four times the normal levels of Roundup® herbicide. Pet. App. 4a-5a, 45a, 63a. These were exceptional results, and the first time that such glyphosate tolerant corn had been produced in the field. Pet. App. 63a.

Despite its obligation to provide such results to RPA, however, DeKalb withheld and suppressed these results, and undertook an ultimately successful effort to convince RPA to transfer rights to the RD-125 to DeKalb for free. First, on September 7, 1994, DeKalb's chief scientist on the project, Dr. Christopher Flick, sent a short letter to RPA asking to use RD-125 as a "selective marker" in soybeans. Pet. App. 4a-5a,

45a-46a, 63a. The clear impression of the letter was that RD-125 was still in the petri dish laboratory stage (which is the only place "selective markers" are used). DeKalb stresses that Dr. Flick used the words "very encouraging" in the letter, but that referred to the use of RD-125 as a laboratory "selective marker," not "very encouraging" in the field, which information Dr. Flick intentionally suppressed.

Incredibly, Dr. Flick had the successful Hawaii results when he wrote his letter about soybeans to RPA, but said nothing about the results. When Dr. Flick was asked why he did not inform RPA about the Hawaii field test results in the letter he was writing, Dr. Flick could only respond that it would have required him to "write a longer letter." Pet. App. 11a, 62a.

On the same day as Dr. Flick wrote his "short letter," Douglas Fisher, DeKalb's deputy general counsel, sent a letter to RPA suggesting that DeKalb and RPA "move quickly" to prepare an agreement that would terminate the parties' collaboration and give DeKalb rights to RPA's genetic constructs (including RD-125). Pet. App. 11a, 61a. Mr. Fisher could propose a new agreement, because of a separate, but serendipitous, dispute between the Calgene/RPA/DeKalb group and the Monsanto Company. Because of various exclusive and non-exclusive rights between the parties, it was inevitable that any agreement with Monsanto Company would require a new agreement between Calgene, RPA and DeKalb, and this provided a well-timed opportunity for DeKalb to extract a new licensing agreement from RPA, without raising any inquiries. DeKalb then exploited that opportunity to suggest a simple termination of the existing license Agreement and free license of RPA's technology to DeKalb.

DeKalb's attorney, Mr. Fisher, knew about the field test results, and knew that the results had to be disclosed to RPA, but he, like Dr. Flick, suppressed that information from RPA. Instead, Mr. Fisher worked with RPA to push the settlement with Monsanto Company and a new agreement providing free rights to the now all-important RPA technology. Mr. Fisher and Dr. Flick specifically prepared and provided to RPA a list of RPA materials to which DeKalb sought license rights from RPA, which included RD-125 buried in the list with previous failed DNA constructs, without ever pointing to or advising RPA of the new field test results. Pet. App. 11a-12a, 61a.

In the meantime, and unknown to RPA, DeKalb immediately began backcrossing the glyphosate tolerant corn plants containing RD-125 with commercial corn varieties (also referred to as DeKalb's elite corn lines). Pet. App. 5a, 46a. This backcrossing process was the necessary next step toward commercializing the RD-125 glyphosate tolerant corn. Pet. App. 5a. DeKalb concealed all of this from RPA, even as DeKalb included RD-125 in the list of materials that RPA would license to DeKalb for free as part of the termination of their prior agreements.

DeKalb's scheme was successful. DeKalb's misleading letters and suppression of information that DeKalb was obligated to provide to RPA deceived RPA. Calgene, RPA and DeKalb dissolved their prior Agreements and the RPA-DeKalb collaboration. As part of that termination, on December 16, 1994, RPA granted DeKalb the "world-wide, paid-up right to use" various technologies, expressly including RD-125, all without any knowledge or inkling that RD-125 had produced the first known glyphosate tolerant corn grown from seed or in the field. Pet. App. 5a-6a, 11a-12a, 46a-47a, 61a. At the time that the new agreement was signed, DeKalb had the Hawaii results for over three months, and, despite repeated contacts with RPA,

never advised RPA of the results. RPA, in turn, believed that the field trials had failed, just like all the prior field trials had before.

DeKalb's attempt to discount the reprehensibility of its fraud is inconsistent with the facts. For example, DeKalb thrice argues that it wrote to RPA in 1994 and stated that its test results were "very encouraging." Pet. 3, 4, 9. Yet, the author of the letter, Dr. Flick, admitted that he wrote the letter "on another subject." Opp. App. 1a-2a. Even more damning for DeKalb is the District Court's acknowledgment that the 1994 letter was intentionally deceitful and was *one of the bases for the fraud*:

> [I]mmediately after learning of the Hawaii results Dr Flick wrote the "soybean" letter — using the same word "encouraging" as had been used in the February lab report cover letter — for the purpose of lulling RPA into believing DeKalb was maintaining open communications and that there had been no further positive results so that DeKalb could gain full rights to RD-125 and a huge advantage over other potential competitors.

Pet. App. 63a. The trial judge independently concluded that DeKalb's fraud involved "intentional trickery and deceit" and was "at the apex of reprehensibility." Pet. App. 146a. The trial judge and the Federal Circuit also considered DeKalb's conduct reprehensible because the fraud was perpetrated in part by DeKalb's attorney. Pet. App. 11a-12a, 61a.

After DeKalb acquired the rights to RPA's genes, DeKalb began a relationship with Monsanto Company. In January 1996, DeKalb contributed its RD-125 transformed corn to Monsanto as part of a marketing agreement, and the two completed development of glyphosate tolerant corn that was based on

RD-125. DeKalb and Monsanto introduced commercial glyphosate-tolerant corn or "Roundup Ready®" corn in 1997 for the 1998 growing season. Pet. App. 6a, 47a.

C. Proceedings Below

Upon discovering the fraud, RPA promptly sued DeKalb and Monsanto Company in the United States District Court for the Middle District of North Carolina. RPA sought, *inter alia*, to rescind the fraudulently-induced 1994 Agreement with DeKalb.This was equitable relief, which prohibited RPA from seeking any legal damages under North Carolina law for DeKalb's fraud in inducing the Agreement. Instead, RPA could only seek equitable relief, in the form of obtaining unjust enrichment from DeKalb, if it were to rescind the Agreement.

After a full trial, the court properly instructed the jury on all the issues, including punitive damages. DeKalb has never challenged the punitive damages jury instructions either at trial or on appeal. After the jury found fraud and assessed $15 million in unjust enrichment and $50 million in punitive damages, the trial judge entertained full briefing and oral argument on DeKalb's post-trial motions, but confirmed the jury verdicts in a lengthy and detailed decision.

DeKalb appealed to the Federal Circuit, which again considered the punitive damages issue under this Court's precedent. The court also affirmed the award, and maintained that on requests for reargument and reargument *en banc*.

REASONS FOR DENYING THE WRIT

DeKalb erroneously claims that this case is like *State Farm Mutual Automobile Insurance Co. v. Campbell*, No. 01-1289 (cert. granted June 3, 2002). The two cases, however, are entirely

different, and have no facts or legal issues in common. Nor is there any conflict with any other decision of any Court of Appeals. DeKalb's allegations of "wayward decision" is not a substitute for a fair and accurate statement of the issues below.

DeKalb first mischaracterizes the decision below as allegedly finding sufficient reprehensibility in DeKalb's fraud based on the jury's finding that DeKalb's witnesses were not credible. Neither the District Court nor the Appellate Court ever said that. The reprehensibility of DeKalb's behavior is evidenced by the uncontested jury finding that DeKalb's executives intentionally defrauded RPA out of rights to RPA's hugely-valuable technology. The Appellate Court properly examined the record "under the judicial microscope." Pet. App. 17a. It reviewed the record of the case, and the jury instructions (even though the jury instructions were never challenged by DeKalb). *Id.* The court then said that factual determinations underlying reprehensibility are a jury issue when the facts are disputed, as they were here. In accordance with black-letter law, the jury is entitled to evaluate the credibility of witnesses in making those factual determinations underlying the fraud and its reprehensibility. DeKalb confuses the facts of reprehensibility with the established right of the jury to make credibility determinations in determining any fact issue.

The ratio of the punitive damages award to RPA's actual and potential harm falls well within the range of ratios approved by the Court. DeKalb was unjustly enriched in the amount of $15 million for just two years of using RPA's defrauded technology, which is enrichment denied to RPA in whole or at least in part. This itself establishes a ratio of about 3 to 1. Moreover, DeKalb anticipated profits of $500 million from its sale of the glyphosate tolerant corn that it defrauded from RPA. Opp. App. 3a-4a. Contrary to DeKalb's unsupported argument,

RPA did not "choose" to seek unjust enrichment instead of damages, but was forced to do so in order to rescind the 1994 Agreement. Opp. App. 136a-137a. RPA's actual damages far exceeded the unjust enrichment award.

Finally, the Federal Circuit correctly rejected DeKalb's attempt to use a later-enacted North Carolina statute in evaluating the "comparability" of the punitive damages award to the civil or criminal penalties that could have been imposed for comparable misconduct. The most comparable statutes under which DeKalb could have been charged authorized fines and imprisonment against DeKalb for its fraudulent conduct.

I. THE FEDERAL CIRCUIT'S APPLICATION OF THE *BMW v. GORE* GUIDEPOSTS DOES NOT MERIT REVIEW

A. DEKALB'S CONDUCT WAS SUFFICIENTLY REPREHENSIBLE

In *Cooper*, this Court stated that "[t]he factual findings made by the district courts in conducting the excessiveness inquiry, of course, must be accepted unless clearly erroneous." *Cooper Industries, Inc. v. Leatherman Tool Group, Inc.*, 532 U.S. 424, 435 (2001). The Court continued that "nothing in our decision today suggests that the Seventh Amendment would permit a court, in reviewing a punitive damages award, to disregard such jury findings." *Id.* at 439 n.12. Finally, the Court admonished that "[w]hile we have determined that the Court of Appeals must review the District Court's application of the *Gore* test *de novo*, it of course remains true that Court of Appeals should defer to the District Court's findings of fact unless they are clearly erroneous." *Id.* at 440 n.14.

This Court also emphasized that deference to the district court's findings is particularly appropriate in determining the "reprehensibility" of the tortfeasor's conduct, in part because "the district courts have a somewhat superior vantage over courts of appeals . . . primarily with respect to issues turning on witness credibility and demeanor." *Id.* at 440.

The facts of DeKalb's fraud were previously recited (pp. 2-7, *supra*). To find fraud, the jury was instructed that RPA had to prove, *inter alia*, material misrepresentation by DeKalb which was reasonably calculated to deceive, and that DeKalb's misrepresentation was "made with the intent to deceive." Pet. App. 9a, 54a, 63a. Thus, the unchallenged finding of fraud establishes that DeKalb had intended to deceive RPA and did deceive RPA to its damage by misrepresentation of material facts. The jury necessarily found DeKalb's professions of good-faith or lack of intent to deceive to be implausible and incredible, and the District Court and the Appellate Court held that the record supported the jury verdict. The finding of intentional deception by material misrepresentation is a basis for reprehensibility and the credibility assessments leading to that finding are the jury's prerogative under both *Gore* and *Cooper*.

Further, the District Court instructed the jury on punitive damages (without any objection by DeKalb) that

> . . . punitive damages are awarded to a party based on another party's outrageous or aggravated conduct [including] actual malice, oppression, a gross and wilful wrong, . . . a reckless or wanton disregard of the plaintiff's rights, or otherwise accompanied by circumstances of fraud, recklessness, wantonness, bad faith, or circumstances of oppression.

The Court further instructed the jury that:

> In deciding whether to award punitive damages, you must determine that there is a need to punish the defendant for its conduct, or to deter the defendant or others from engaging in this or similar conduct in the future, or to make an example out of the defendant. Furthermore, if you decide, in your discretion, to award punitive damages, any amount you award must bear a rational relationship to the sum reasonably needed to punish the defendant for its conduct, or to deter the defendant or others from engaging in this or similar conduct in the future, or to make an example out of the defendant.

Opp. App. 5a-6a.

The above instructions agreed to by DeKalb also necessarily require the jury to assess witnesses' testimony and credibility. Thus, as held in *Gore* and *Cooper*, the issue of reprehensibility requires factual determinations that are traditionally performed by juries, and reviewing courts have to defer to such jury verdicts.

The Appellate Court strictly adhered to this Court's rulings, and subjected the punitive damages verdict to the searching inquiry of "the judicial microscope." Pet. App. 17a. The Court determined that the jury instructions were proper (indeed unchallenged by DeKalb), that the issue was properly submitted to the jury, and that the presumed findings of the jury were supported by the record.

DeKalb's assertion at Petition p. 11 that the Appellate Court "held that the reprehensibility guidepost was satisfied . . . exclusively because the jury 'may' have concluded that two of DeKalb's witnesses were not credible" is outrageously false. Reprehensibility was established by DeKalb's intentional fraud

and the additional elements set forth in the court's jury instructions. Because DeKalb cannot assert and does not assert that there was not record evidence to support the reprehensibility determinations by the properly-instructed jury, that ends the issue.

DeKalb stresses the Appellate Court's statement that the facts do not demonstrate the "enhancing" factors of "violence, disregard for the health and safety of others, a pattern of misconduct, or the exploitation of a financially vulnerable target." (Pet. 11) But, *Gore* also held that other criteria, present here, support reprehensibility, including "deliberate false statements, acts of affirmative misconduct, or concealment of evidence of improper motive." *BMW of North America, Inc. v. Gore*, 517 U.S. 559, 579 (1996). The *Gore* court also noted "trickery and deceit" and "intentional malice" in its discussion of reprehensibility. *Id.* at 576.[1] ("infliction of economic injury, especially when done intentionally through affirmative acts of misconduct . . . can warrant a substantial penalty"). There is simply no difference for *Gore* purposes between an express lie and a falsehood intentionally created by misleading conduct and withholding of material information.

DeKalb cannot argue that intentional breach of an agreement to provide test results and intentional defrauding of a partner in a joint-development program is not sufficiently reprehensible to support punitive damages as a matter of Due Process.

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1. In the wake of *Gore*, courts have listed, as *Gore* reprehensibility enhancing factors, both the "intentional" and "deceitful" nature of the defendant's conduct. *See, e.g., Continental Trend Resources, Inc. v. OXY USA Inc.*, 101 F.3d 634, 638 (10th Cir.), *cert. denied*, 520 U.S. 1241 (1997) ("among the questions we ask are whether a defendant's behavior . . . is intentional"); *Lee v. Edwards*, 101 F.3d 805, 809 (2d Cir. 1996) (stating that the *Gore* "aggravating factors" include "whether a defendant acted with deceit or malice as opposed to acting with mere negligence").

Contrary to DeKalb's argument, there is no conflict with decisions of other courts. For example, *In re Exxon Valdez*, 270 F.3d 1215 (9th Cir. 2001) (Pet. 14) is not inconsistent, because the Ninth Circuit noted that there had been "no executive trickery to hide or facilitate the spill"; "Exxon did not spill the oil on purpose"; and Exxon voluntarily spent millions of dollars to compensate people and remedy the harm after the spill. *Id.* at 1242. Here, DeKalb's *executives* perpetrated the fraud, which the district court characterized as "intentional trickery and deceit" (Pet. App. 146a); the executives *intentionally* defrauded RPA (*i.e.*, they defrauded RPA on purpose); and DeKalb has *not* been punished by spending millions in other arenas to ameliorate its fraud.[2]

Second, there is no inconsistency between the Federal Circuit's evaluation of reprehensibility and that of other circuits. This Court held in *Cooper* that deference to the district court's findings and evaluations of "witness credibility and demeanor" are particularly appropriate — indeed necessary — with respect to the reprehensibility inquiry. *Cooper*, 532 U.S. at 440; *see also TXO Production Corp. v. Alliance Resources Corp.*, 509 U.S. 443, 464-65 (1993) (relying on trial judge's express "agreement with the jury's appraisal of the egregious character of the conduct of TXO's executives"). The Federal Circuit followed *Cooper* and *TXO* in giving weight to the District

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2. DeKalb ignores the impact of its undisputed *intent to defraud* in the reprehensibility analysis. Intent is an important reprehensibility consideration. *See Gore*, 517 U.S. at 575-76; *TXO Production Corp. v. Alliance Resources Corp.*, 509 U.S. 443, 462 (1993) (considering "bad faith of petitioner"). In *Gore*, the Court stated that "[a]n *intentional* misrepresentation, made through a statement or silence, can easily amount to 'fraud' sufficient to warrant punitive damages." 517 U.S. at 588. Here, the jury found intentional fraud, and the District Court and the Federal Circuit upheld it, and DeKalb no longer contests it.

Court's express condemnation of DeKalb's witnesses and the jury's verdict that is consistent therewith. DeKalb's argument that credibility of witnesses is irrelevant (Pet. 11) contradicts *Cooper* and *TXO*. In *Zimmerman v. Direct Federal Credit Union*, 262 F.3d 70, 82 (1st Cir. 2001), contrary to DeKalb's argument, the First Circuit found that reprehensibility was supported by the jury's adverse verdict, which was not appealed and thus was left unchallenged. The *Zimmerman* court also reasoned that "the jury rationally could have found that [defendants] mounted a deliberate, systematic campaign" against plaintiff. *Id.* This type of reasoning and reliance on the jury verdict is precisely what the Federal Circuit did in the instant case.

DeKalb additionally argues that its intentional fraud is not reprehensible, because it was perpetrated "in the business setting," and that RPA's damage was merely "economic." Pet. 13. DeKalb misstates the law. Economic fraud in a business setting is sufficiently reprehensible to support punitive damages under the Due Process clause. This Court has acknowledged that "infliction of economic injury, especially when done intentionally through affirmative acts of misconduct . . . can warrant a substantial penalty." *Gore*, 517 U.S. at 576. Indeed, the Court, in *TXO*, affirmed a $10 million punitive damages award (on a $19,000 actual damages award) where one company had defrauded another company out of the benefits of a land purchase and oil development contract that they had previously executed. *TXO*, 509 U.S. at 459-462. None of the cases cited by DeKalb (Pet. 13) involved intentional fraud by one of two parties involved in a close research collaboration. Moreover, other cases have found reprehensibility in the business context when the facts warranted such a finding. *See, e.g., TXO*, 509 U.S. at 459-462; *Tronzo v. Biomet*, 236 F.3d 1342, 1350 (Fed. Cir.), *cert. denied*, 122 S. Ct. 580 (2001); *Guzman v. Tower Dev. Co.*, 1997 WL 801449, *2 (9th Cir.

Dec. 19, 1997) (punitive damages appropriate under *Gore* when defendant's fraud "shows 'contempt for honest business dealings,' and were clearly 'reprehensible' "). (Indeed, recent disclosures of the significant harm caused to thousands of employees and third parties by apparent economic fraud in a business setting blurs whatever distinction there is between "business" and "personal" harm.)

Accordingly, DeKalb's intentionally fraudulent conduct was reprehensible, and the Federal Circuit did not err in its review of this factor.

B. THE PUNITIVE DAMAGES AWARD MET THE "RATIO" GUIDEPOST

DeKalb also attempts to create a false issue as to the "ratio" standard for excessiveness. The facts are that RPA was limited to seeking equitable unjust enrichment recovery in order to obtain the equitable relief of recission of the 1994 Agreement. RPA's damages were significantly higher than the $15 million it recovered under unjust enrichment, but RPA could not claim the damages, because, under North Carolina law, one could not proceed in damages under an Agreement that was rescinded. Opp. App. 136a-137a.

Nevertheless, RPA recovered $15 million as a portion of DeKalb's profits by which DeKalb was unjustly enriched. The Appellate Court, therefore, correctly held that the punitive damages "ratio" was about 3 to 1, falling "well within the ratios approved in other cases." Pet. App. 19a. The jury's award of punitive damages is consistent with the precedents of the Court. *See TXO*, 509 U.S. at 459-62 (upholding a punitive damages award alleged to be 526 times as large as the actual damage award, while emphasizing that the magnitude of potential harm was likely much greater than the actual damages); *Pacific Mut.*

Life Ins. Co. v. Haslip, 499 U.S. 1, 23 (1991) (approving a punitive damage award more than 4 times the amount of compensatory damages). In affirming the punitive damages award, the Federal Circuit addressed and rejected DeKalb's argument that, in determining "proportionality," the $50 million punitive damages should have been compared to the $1 nominal damages award, not the $15 million unjust enrichment award. Pet. App. 19a-21a. In its Petition, DeKalb essentially repeats the argument it made below. The Federal Circuit thoroughly disposed of that argument. Pet. App. 19a-21a.

In *TXO*, the Court confirmed that the proper "ratio" inquiry was "whether there is a reasonable relationship between the punitive damages award and *the harm likely to result* from the defendant's conduct as well as the harm that actually has occurred." *TXO*, 509 U.S. at 460 (quoting *Haslip*, 499 U.S. at 21). In *Gore*, the Court repeated this inquiry, and considered the "actual harm as determined by the jury" as well as "any additional potential harm" due to the defendant's wrongdoing. *Gore*, 517 U.S. at 581-82. The Court stated that "[a] higher ratio may . . . be justified in cases in which the injury is hard to detect or the monetary value of noneconomic harm might have been difficult to determine." *Id.* at 582. In addition, the ratio may be substantially higher if there is potential or likely harm from the defendant's conduct that is not adequately captured by the damages award. *TXO*, 509 U.S. at 460-61 (1993) (affirming $10 million in punitive damages on $19,000 actual damages based on the amount of money potentially at stake, a larger scheme of fraud, trickery and deceit, and defendant's wealth).

In the instant case, the harm to RPA can be measured by DeKalb's unjust enrichment. The District Court "adopt[ed] the jury's determination that $15 million is an appropriate calculation of the role played by RD-125 in the success of

Roundup Ready corn," because "RPA's RD-125 construct is directly responsible for imparting the glyphosate resistant trait to Roundup Ready corn." Pet. App. 141a-142a. In other words, the unjust enrichment award "represents sales proceeds directly attributable to the wrongful use of RD-125." Pet. App. 147a. Thus, the $15 million represents the value of RPA's RD-125 construct for a 2-year period after DeKalb had fraudulently induced RPA to part with it. Pet. App. 146a. As the Federal Circuit recognized, "[d]enying RPA the opportunity to profit from the technology it expended money and effort to develop certainly constitutes harm." Pet. App. 21a. The Federal Circuit held that "[a]t a minimum, the unjust enrichment of DeKalb relates to the bad actions of DeKalb and resultant harm to RPA." Pet. App. 21a.

In addition, DeKalb's own documents demonstrate that DeKalb anticipated $500 million in profits if its scheme had succeeded. Opp. App. 3a-4a. RPA's potential harm — the harm that would have resulted had DeKalb fully succeeded with its fraudulent scheme — would have far exceeded $15 million. The Federal Circuit stated: "[U]pon examination of the factual basis for the award of unjust enrichment, it appears that had DeKalb's fraud proceeded undetected, the potential lost opportunity and harm to RPA would have continued to increase." Pet. App. 21a. The District Court found that DeKalb's fraud caused RPA not to license its invention to others when it would have been most profitable. Pet. App. 146a. Because RPA was defrauded, RPA lost the opportunity to develop its own technology, and would have continued to lose that opportunity had it not been halted by the District Court. RPA lost the opportunity to exploit its own technology, which delayed its entry into the glyphosate tolerance market and precluded its ability to license its technology to others. Pet. App. 145a. RPA's harm was thus far-reaching and if allowed to go unchecked,

would have been even greater. This potential harm — completely ignored by DeKalb in its Petition — must be considered in the "ratio" analysis. *See TXO*, 509 U.S. at 460 ("It is appropriate to consider the magnitude of the potential harm that the defendant's conduct would have caused to its intended victim if the wrongful plan had succeeded, as well as the possible harm to other victims that might have resulted if similar future behavior were not deterred.").

DeKalb also wrongly asserts that RPA was awarded "the full amount of DeKalb's profits" as unjust enrichment. Pet. 15. The evidence showed that DeKalb's Roundup Ready corn profits over a mere two-year period amounted to $21.8 million, and the District Court determined — based on "the role played by RD-125 in the success of Roundup Ready corn" — that $15 million of this total amount constituted RPA's harm caused by DeKalb's fraud. Pet. App. 141a-142a. The Federal Circuit agreed. Pet. App. 21a.

DeKalb's citation to *Cooper* (Pet. 16-17) is unavailing. In *Cooper*, the defendant infringed plaintiff's trademarks (and engaged in unfair competition) by using photographs of plaintiff's product in initial advertisements for Cooper's product. *Cooper*, 532 U.S. at 428. For purposes of the "ratio" guidepost under *Gore*, the district court approximated plaintiff's harm by ascertaining Cooper's anticipated gross profits from all of its sales of its ToolZall product. *Cooper*, 532 U.S. at 442. The Court held that this was improper, because "it would be unrealistic to assume that all of Cooper's sales of the ToolZall would have been attributable to its misconduct in using a photograph of a modified PST in its initial advertising materials." *Id.* The Court reasoned that "[Cooper's] wrongdoing surely could not be treated as the principal cause of Cooper's entire sales volume for a 5-year period." *Id.* This conclusion starkly contrasts to the

instant case, where the District Court examined DeKalb's Roundup Ready corn profits for two years ($21.8 million) and determined that but for RPA's RD-125, DeKalb could not have made a certain portion ($15 million) of those profits. Pet. App. 141a-142a.[3]

In fact, on remand, the Ninth Circuit in *Cooper* held that the punitive damages were properly compared to the $50,000 awarded in *unjust enrichment*. *See Leatherman Tool Group, Inc. v. Cooper Industries, Inc.*, 285 F.3d 1146, 1149 (9th Cir. 2002) ("Cooper . . . realized . . . approximately $50,000 in gross profits."). Thus, the Ninth Circuit, like the Federal Circuit here, has viewed unjust enrichment awards as a proper basis for comparison of excessiveness of the punitive damages award.

DeKalb also argues that the unjust enrichment award constitutes punitive damages. Pet. 17-18. However, the Court has recognized that an award of unjust enrichment is not punitive in nature. In *Tull v. United States*, 481 U.S. 412, 422-23 (1987), the Court examined whether civil penalties authorized by the Clean Water Act were punitive in nature. In doing so, the Court contrasted remedies that "disgorge[d] profits" from those that "impose[d] punishment." *Id.* at 423. Indeed, "[i]t is well established that disgorgement is remedial rather than punitive, since a fundamental policy underlying disgorgement is to prevent the unjust enrichment of the wrongdoer rather than to punish him." *SEC v. Robinson*, Fed. Sec. L. Rep. P 91,948, 2002 WL 1552049, *7 (S.D.N.Y. July 16, 2002); *see also United States v.*

3. As noted by the Federal Circuit, North Carolina law allows punitive damages to be assessed based on unjust enrichment damages. *See Mehovic v. Mehovic*, 514 S.E.2d 730 (N.C. Ct. App. 1999) ("North Carolina public policy supports an award of punitive damages upon a jury verdict establishing fraud and consequent entitlement, at the plaintiff's election, either to rescission or compensatory damages."). Pet. App. 21a.

Carson, 52 F.3d 1173, 1183 (2d Cir. 1995), *cert. denied*, 516 U.S. 1122 (1996) ("Disgorgement, by design, is compensatory. Indeed, the Supreme Court has specifically identified an order of disgorgement as compensatory, as opposed to punitive, in nature.") (citing *Tull*, 481 U.S. at 422-23) (other citations omitted). *Cf. Snepp v. United States*, 444 U.S. 507, 523 (1980) (contrasting "the concept of unjust enrichment" with that of "deterrence and punishment") (Stevens, J., dissenting).

The Federal Circuit did not abrogate any of its responsibility in reviewing the relationship between the harm to RPA caused by DeKalb's fraud and the penalty assessed to DeKalb for its fraudulent actions.

C. THE PUNITIVE DAMAGES AWARD SATISFIED THE "COMPARABLE PENALTIES" GUIDEPOST

As in *Gore*, the Federal Circuit compared the punitive damages amount with the civil or criminal sanctions that could have been imposed upon DeKalb for comparable misconduct. Pet. App. 22a-24a. As had the District Court, the Federal Circuit concluded that the *Gore* "comparability" analysis was met. Pet. App. 24a; 143a-147a.

Critical to the "comparable penalties" guidepost is the notion of *fair notice*. "Elementary notions of fairness enshrined in our constitutional jurisprudence dictate that a person receive fair notice not only of the conduct that will subject him to punishment, but also of the severity of the penalty that a state may impose." *Gore*, 517 U.S. at 574. In reviewing punitive damages awards, the Court has consistently examined whether "*prior* law fairly indicated that a punitive damages award might be imposed in response to egregiously tortious conduct." *TXO*, 509 U.S. at 466 (emphasis added).

Importantly, the third guidepost compares the punitive damages award against the civil and criminal sanctions that could be imposed for comparable misconduct. Although neglected in DeKalb's Petition, "North Carolina criminal statutes in 1994 made obtaining property by false pretenses a felony punishable by a term of incarceration and a fine at the discretion of the court." Pet. App. 23a-24a. This is particularly relevant because where conduct can be sanctioned by imprisonment, punitive damages can be assessed far in excess of the allowable monetary fine. *Haslip*, 499 U.S. 1 at 23. The availability of substantial jail sentences under similar circumstances demonstrates the propriety of a substantial punitive damages verdict. *See Gore*, 517 U.S. at 583 (noting that the potential for imprisonment counterbalances the small size of the statutory fine); *see also Grabinski v. Blue Springs Ford Sales, Inc.*, 203 F.3d 1024, 1026 (8th Cir.), *cert. denied*, 531 U.S. 825 (2000) (in affirming a substantial punitive damages award, the court relied on a Missouri statute making fraud a felony punishable by up to five years in prison and a fine of up to $5,000).

DeKalb only argues that, with regard to comparable civil sanctions, North Carolina's new punitive damages statute — which was enacted *after* DeKalb's fraudulent conduct occurred — must be considered. Pet. 18-22. This argument was rejected by the District Court (Pet. App. 143a) and the Federal Circuit (Pet. App. 22a-24a). Specifically, the Federal Circuit concluded that "subsequent changes in the law occurring after the misconduct has taken place are not relevant as an example of a comparable sanction." Pet. App. 23a. This follows the dictates of *Gore*, where the Court stated that courts are to look at "civil or criminal penalties that *could be imposed* for comparable misconduct." *Gore*, 517 U.S. at 583 (emphasis added). Of course, if a statute is inapplicable, then the penalties set forth in that statute are not penalties that "*could be imposed*."

In *Gore*, the Court found other civil penalties relevant because they indicated whether a defendant was given "fair notice" as to its potential liability for particular misconduct. *Gore*, 517 U.S. at 574. The Court in *Gore* did not conduct the third guidepost analysis by relying on a statute enacted after the tortious conduct. In fact, such an analysis would be nonsensical, because any statute enacted after the tortious conduct could not provide the defendant with "notice" of punishment for its actions. The Court in *Gore* recited numerous statutes from those jurisdictions in which the defendant committed its wrongful action, and noted Alabama's later-enacted statute. *Id.* at 584. The Court concluded its analysis by holding that none of the various state statutes could have provided the defendant "fair notice" that it could be subject to a large fine. *Id.*[4]

DeKalb's argument that "only the Federal Circuit has rejected the relevance of" after-enacted statutes is simply wrong. *See Baker v. National State Bank*, 801 A.2d 1158, 1169 (N.J. Super. Ct. App. Div. 2002) ("In determining fair notice, it is appropriate only to consider those statutes and cases in effect at the time of the Bank's decision to terminate plaintiffs

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4. Similarly, despite DeKalb's argument (Pet. 20 n.13), *Cooper* does not authorize reliance upon an after-enacted statute during a review of the third *Gore* guidepost. In *Cooper*, the Court looked at an existing statute under which the defendant "*would have been* subject to" penalties. 532 U.S. at 442 (emphasis added). The Court subsequently observed that the parties' positions differed with regard to whether there was a single statutory violation, as opposed to numerous violations. *Id.* This is irrelevant to the third guidepost analysis; the statute was in existence, thus the tortfeasor was on "fair notice" of it. Also unsupportive of DeKalb's argument is the decision upon remand in *Leatherman Tool Group, Inc. v. Cooper Industries, Inc.*, 285 F.3d 1146, 1149 (9th Cir. 2002) (the third *Gore* guidepost asks whether "the award here was comparable to the amount that *might have been recovered* in civil penalties in a comparable case") (emphasis added).

in 1991."); *Ingalls v. Paul Revere Life Ins. Group*, 561 N.W.2d 273, 286 (N.D. 1997) (refusing to consider state statutory limits on punitive damages because they were enacted after the tortious conduct that gave rise to the punitive damages); *St. John v. Coisman*, 799 So.2d 1110, 1113 (Fla. Dist. Ct. App. 2001) (court looked to "the statute in effect when th[e] cause of action arose"); *Hundley ex rel. Hundley v. Rite-Aid of South Carolina, Inc.*, 529 S.E.2d 45, 62-63 (S.C. Ct. App. 2000) (in analyzing the third Gore factor, the court looked at version of statute "in effect at the time of the incident").

DeKalb erroneously cites to three Circuit Court cases as "hav[ing] held that statutes or other legal authority made effective after the allegedly tortious conduct can be relevant to the third *Gore* guidepost." Pet. 21. *Zimmerman v. Direct Federal Credit Union*, 262 F.3d 70 (1st Cir. 2001), in fact, directly contradicts DeKalb's argument. The *Zimmerman* court stated that"a reviewing court should search for comparisons *solely* to determine whether a particular defendant was given fair notice as to its potential liability for particular misconduct, not to determine an acceptable range into which an award might fall." *Id.* at 83 (emphasis added). Contrary to DeKalb's representation, the *Zimmerman* court did not rely on any authority — statutory, decisional, or other — that became effective after the date the plaintiff's claim arose.

The Eleventh Circuit case cited by DeKalb, *Johansen v. Combustion Engineering, Inc.*, 170 F.3d 1320 (11th Cir. 1999), *cert. denied*, 528 U.S. 931 (1999), also fails to support the proposition for which DeKalb cites it. In *Johansen*, the Eleventh Circuit, in applying the third *Gore* guidepost, looked to the Georgia Water Quality Control Act, O.C.G.A. §§ 12-5-20 — 12-5-53, a statute enacted before the conduct at issue and which provides for civil fines of up to $100,000 for pollution of Georgia

streams. *Id.* at 1337. The defendant in *Johansen* polluted Georgia streams long after the enactment of the statute, and was fined $10,000 pursuant to the statute. The court reasoned that where a statute provides for a range of penalties depending on the severity of the violation, the maximum fine need not be used. The court chose $10,000, because that was the amount of the actual fine. *Id.* The court further reasoned that the $10,000 fine was the state-imposed penalty for the specific "conduct at issue," thus it could be viewed as an indication of the "legislative judgment" for that specific conduct. *Id.*

The final case cited by DeKalb is *In re Exxon Valdez*, 270 F.3d 1215 (9th Cir. 2001). In that case, the Ninth Circuit relied on a statute *specifically enacted* with regard to the Exxon Valdez oil spill, thus the statute comprised "Congress's [express] retrospective judgment" regarding the specific facts of that case. *Id.* at 1246. Moreover, other Ninth Circuit decisions demonstrate that "[t]he fundamental question is whether [defendant] had reasonable notice that its conduct could result in a substantial punitive award." *Guzman*, 1997 WL 801449 at *2; *see also Leatherman v. Cooper*, 285 F.3d at 1149 (the third *Gore* guidepost asks whether "the award here was comparable to the amount that *might have been recovered* in civil penalties in a comparable case") (emphasis added); *Neibel v. Trans World Assurance Co.*, 108 F.3d 1123, 1132 (9th Cir. 1997) (the court looked to the "state and federal criminal sanctions [that] potentially *existed* for [defendant's] transgressions") (emphasis added). The *Exxon Valdez* decision is thus questionable because it examined a statute enacted after the tortious conduct in question, and distinguishable because the Ninth Circuit examined a legislative determination specific to the tortious conduct at issue in *Exxon Valdez*. At a minimum, general statutes that are enacted after the tortious conduct in question have no relevance under *Gore*.

DeKalb also argues that North Carolina courts apply the 1996 punitive damages statute to conduct occurring before the statute's enactment. Pet. 19 n.12. This argument is squarely contradicted by the editor's note to the North Carolina statute as well as every relevant decision discussing the issue. *See* Pet. App. 22a (the editor's note to the statute states that the statute "is applicable to claims for relief arising on or after [January 1, 1996]"); N.C. Gen. Stat. § 1D-1 (2000) (editor's note); Pet. App. 143a (district court opinion); *Food Lion, Inc. v. Capital Cities/ ABC, Inc.*, 984 F. Supp. 923, 936 (M.D.N.C. 1997), *aff'd in part, rev'd in part*, 194 F.3d 505 (4th Cir. 1999) ("[I]n passing that statute, the General Assembly determined that the statute should not be made retroactive. By making that determination, the legislature indicated that the prior standards which governed punitive damages should apply to claims arising before January 1, 1996."); *Connelly v. Family Inns of America, Inc.*, 540 S.E.2d 38, 44 (N.C. Ct. App. 2000) ("[S]ince Chapter 1D of the North Carolina General Statutes pertaining to punitive damages was not effective until after the incident in this case occurred, it does not apply."). The cases relied upon by DeKalb are inapposite or did not address the issue. *See Watson v. Dixon*, 532 S.E.2d 175, 176 n.1 (N.C. 2000) (the issue could not have arisen because the conduct and the lawsuit arose before the statute; statute held inapplicable); *Hutelmyer v. Cox*, 514 S.E.2d 554 (N.C. Ct. App. 1999) (the issue was never raised); *McNeill v. Holloway*, 539 S.E.2d 309 (N.C. Ct. App. 2000) (same).

It should also be noted that even if the North Carolina punitive damages capping statute were applicable, which it is not, the amount awarded by the jury would pass constitutional muster. The North Carolina statute would permit, as punitive damages, three times the damages awarded against DeKalb,

which comes out to $45 million.[5] The jury awarded $50 million, which is neither "much in excess of" nor "substantially greater than" $45 million. *See Gore*, 517 U.S. at 583-84.

II. THIS CASE HAS NOTHING IN COMMON WITH *STATE FARM v. CAMPBELL* AND THUS THE *STATE FARM* DECISION WILL HAVE NO RELEVANCE TO THE ISSUES PRESENTED IN THIS CASE

DeKalb seeks to piggy-back on the Court's grant of certiorari in *State Farm Mutual Automobile Insurance Co. v. Campbell*, No. 01-1289 (cert. granted June 3, 2002). However, contrary to DeKalb's argument, the issues in the instant case do not "complement and amplify those presented in *State Farm* in significant respects." Pet. 22.

The issue presented in *State Farm* is:

> Did the Utah Supreme Court, in direct contravention of *BMW of North America Inc. v. Gore*, 517 U.S. 559 (1996) and fundamental principles of due process, commit constitutional error by reinstating a $ 145 million punitive damage award that punishes out-of-state conduct, is 145 times greater than the compensatory damages in the case, and is based on the defendant's alleged business practices nationwide over a 20-year period, which were unrelated and dissimilar to conduct by the defendant that gave rise to the plaintiffs' claims?

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5. The $15 million unjust enrichment award would be used as the basis for the multiplication. *See Mehovic v. Mehovic*, 514 S.E.2d 730, 734 (N.C. Ct. App. 1999) ("North Carolina public policy supports an award of punitive damages upon a jury verdict establishing fraud and consequent entitlement, at the plaintiff's election, either to recission or compensatory damages.").

DeKalb's attempt to morph the present issues to those raised in *State Farm* is plainly wrong.

First, *State Farm* does not present any reprehensibility issues similar to the facts here or those argued in DeKalb's petition. In *State Farm*, the Petitioner merely argued that the lower courts, in assessing reprehensibility, did not limit themselves to sufficiently "similar" past conduct. *State Farm* Pet. pp. 22-23. This issue is not presented in DeKalb's petition, and never arose during the case below. Instead, DeKalb broadly characterizes the *State Farm* petition as seeking review of the lower courts' consideration of "additional factors not explicitly mentioned in *Gore*." Pet. 23. This wide net is broad enough to catch virtually every punitive damages case. This is especially true because the *Gore* factors are not mutually exclusive, and the facts giving rise to reprehensible behavior are limitless.

Second, while an issue concerning the punitive damages "ratio" was raised in *State Farm*, it is far different than the "ratio" issue in the instant case. In *State Farm*, the Petitioner has argued that the 145:1 ratio of punitive damages to compensatory damages is unconstitutional. *State Farm* Pet. pp. 18-22. In the instant case, the "ratio" issue is not whether a particular ratio passes constitutional muster. The issue argued by DeKalb is whether the jury's punitive damages award should be compared to the jury's $1 nominal damages award, as opposed to the jury's $15 million unjust enrichment award, for purposes of the "ratio" guidepost analysis. This bears no similarity to the ordinary "ratio" issue that may be addressed in *State Farm*.

Finally, *State Farm* raises no issue with regard to *Gore*'s "comparability" guidepost. In attempt to erect a similarity between this case and *State Farm*, DeKalb cites an issue regarding the Utah Insurance Commissioner's practices that

appears nowhere in the *State Farm* petition. Pet. 23. The only "comparability" issue that appears in the *State Farm* petition involves the lower courts' alleged reliance on "dissimilar" statutes, none of which are alleged to have been enacted after the tortious conduct. *State Farm* Pet. at pp.25-26. This is totally inapposite to the instant case.

Accordingly, DeKalb's Petition bears no resemblance to the *State Farm* petition, and DeKalb's proposed combination of the two petitions makes no logistical or legal sense. Indeed, accepting DeKalb's Petition itself is unwarranted, because it raises no new issues, yet merely recasts properly rejected arguments and ignores the facts. The size of the punitive damages awarded by the District Court, issued pursuant to unchallenged jury instructions, does not demonstrate a constitutional violation in view of the premeditation, significance, and consequences of DeKalb's misconduct.

CONCLUSION

For the foregoing reasons, the petition for a writ of certiorari should be denied.

Respectfully submitted,

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APPENDIX

APPENDIX A — TRANSCRIPT OF TRIAL OF THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA DATED APRIL 13, 1999

IN THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

RHONE-POULENC AGRO, S.A., Plaintiff,
v.
DEKALB GENETICS CORPORATION, Defendant.

Civil Action No. 1:97CV01138
April 13, 1999

TRANSCRIPT OF TRIAL PROCEEDINGS
BEFORE THE HONORABLE N. CARLTON TILLEY, JR.
UNITED STATES DISTRICT JUDGE

* * * *

Q. Did it occur to you — you testified that you believed Dr. Mackey would have been interested in these results. Did it appear to you that possibly somebody at Rhone-Poulenc would also be interested in these results?

A. I don't remember whether I thought about that or not. At this point in time there weren't a whole lot of communications back and forth between us and Rhone-Poulenc. I do believe that I wrote a fax to Georges Freyssinet, though, sometime very shortly after this on another matter and indicated to him that we had very encouraging results, but I remember at least that much.

* * * *

Appendix A

Q: Is this a copy of the fax to which you just referred?

A: I believe it probably is.

Q: You're not sure, though?

A: I believe it is.

Q: And you testified that this fax communication was on another subject matter. What subject matter was that?

A: I believe that I was — asked Georges Freyssinet whether we could use the double mutant gene in soybeans as a selectable marker, based on the fact that at this point in time our results had been very encouraging with the gene in maize and we were interested in using it in soybeans as well.

* * * *

APPENDIX B — TRANSCRIPT OF TRIAL OF THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA DATED APRIL 13, 1999

IN THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

RHONE-POULENC AGRO, S.A., Plaintiff,

v.

DEKALB GENETICS CORPORATION, Defendant.

Civil Action No. 1:97CV01138
April 13, 1999

TRANSCRIPT OF TRIAL PROCEEDINGS
BEFORE THE HONORABLE N. CARLTON TILLEY, JR.
UNITED STATES DISTRICT JUDGE

* * * *

Q. During the course of your analysis, have you seen projections prepared by Monsanto that indicate the amount of revenue it expects to earn as a result of the Roundup Ready trait?

* * * *

THE WITNESS: Yes.

* * * *

Appendix B

Q: And what do those projections by Monsanto show?

A: Gross revenues from the Roundup Ready Corn in excess of 2 billion dollars.

Q: 2 billion dollars over what period of time?

A: Approximately ten years.

Q: Do Monsanto's projections show what amount of that it expects to earn as profit?

A: Yes, it does.

Q: What do those projections show on that?

A: In excess of a half of a billion dollars.

* * * *

APPENDIX C — TRANSCRIPT OF TRIAL OF THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA DATED APRIL 22, 1999

IN THE UNITED STATES DISTRICT COURT FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

RHONE-POULENC AGRO, S.A., Plaintiff,
v.
DEKALB GENETICS CORPORATION, Defendant.

Civil Action No. 1:97CV01138
April 22, 1999

TRANSCRIPT OF TRIAL PROCEEDINGS
BEFORE THE HONORABLE N. CARLTON TILLEY, JR.
UNITED STATES DISTRICT JUDGE

* * * *

In some cases, punitive damages are awarded to a party based on another party's outrageous or aggravated conduct. Outrageous or aggravated conduct may include one or more of the following: Actual malice, oppression, a gross and wilful wrong, insult, rudeness, indignity, a reckless or wanton disregard of the plaintiff's rights, or otherwise accompanied by circumstances of fraud, recklessness, wantonness, bad faith, or circumstances of oppression.

* * * *

Appendix C

In deciding whether to award punitive damages, you must determine that there is a need to punish the defendant for its conduct, or to deter the defendant or others from engaging in this or similar conduct in the future, or to make an example out of the defendant.

Furthermore, if you decide, in your discretion, to award punitive damages, any amount you award must bear a rational relationship to the sum reasonably needed to punish the defendant for its conduct, or to deter the defendant or others from engaging in this or similar conduct in the future, or to make an example out of the defendant.

* * * *